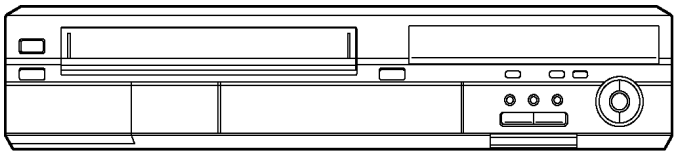
ORDER NO.VR0508007CE
B24

Service Manual

DVD Video Recorder



DMR-ES40VP
DMR-ES40VPC

Vol.1

Colour
(S).....Silver Type

Note 1:
This model's DVD Drive is VXY1867.
Note 2:
This model's VHS Mechanism is R4 Mechanism Chassis for North America Model.
:Order No. VR0404003C1

Panasonic

TABLE OF CONTENTS

PAGE

1 Safety Precaution

1.1. General guidelines

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.1.1. Leakage current cold check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1MΩ and 5.2MΩ.
   When the exposed metal does not have a return path to the chassis, the reading must be ∞ .

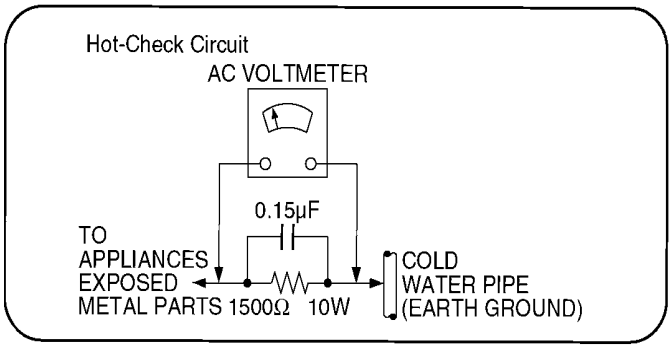


Figure 1

1.1.2. Leakage current hot check (See Figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5kΩ, 10 watts resistor, in parallel with a 0.15µF capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliampere. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

1.2. Caution for fuse replacement

(For English)
CAUTION:

Replace with the same type fuse:
(Manufacturer: Hollyland, Type:50T,2A, 250V)

(For Canadian French)
ATTENTION:

Utiliser un fusible de rechange de même type:
(Fabricant: Hollyland, Type: 50T, 2A, 250V)

2 Warning

2.1. Prevention of Electrostatic Discharge (ESD) to Electrostatic Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatic Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistor-sand semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   Caution
   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise hamless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are imporant for safety.
These parts are marked by ⚠ in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

2.2. Precaution of Laser Diode

CAUTION:

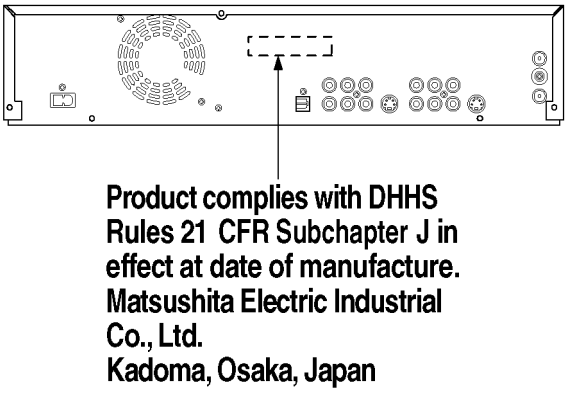
This product utilizes a laser diode with the unit turned “on”, invisible laser radiation is emitted from the pickup lens.
Wave length: 662 nm (DVDs)/780 nm (CDs)
Maximum output radiation power from pickup: 100 μ W/VDE
Laser radiation from the pickup lens is safety level,but be sure the followings:

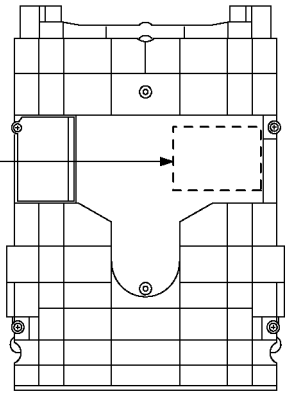
1. Do not disassemble the optical pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

ACHTUNG:

Dieses Produkt enthält eine Laserdiode.
Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit abgestrahlt.
Wellenlänge: 662 nm (DVD)/780 nm (CD)
Maximale Strahlungsleistung der Lasereinheit: 100 μ W/VDE
Die Strahlung der Lasereinheit ist ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlinse blicken.
4. Nicht über längere Zeit in die Fokussierlinse blicken.





CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

2.3. Handling the Lead-free Solder

2.3.1. About lead free solder (PbF)

Distinction of PbF P.C.B.:

P.C.B.s (manufactured) using lead free solder will have a PbF stamp on the P.C.B.

Caution:

- Pb free solder has a higher melting point than standard solder; Typically the melting point is 50 - 70°F (30 - 40°C) higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 700 ± 20°F (370 ± 10°C).
- Pb free solder will tend to splash when heated too high (about 1100°F/600°C).
- When soldering or unsoldering, please completely remove all of the solder on the pins or solder area, and be sure to heat the soldering points with the Pb free solder until it melts enough.

3 Service Navigation

3.1. Service Information

This service manual contains technical information which will allow service personnel's to understand and service this model.
Please place orders using the parts list and not the drawing reference numbers.

If the circuit is changed or modified, this information will be followed by supplement service manual to be filed with original service manual.

1) This service manual does not contain the following information, because of the impossibility of sevicing at component level.

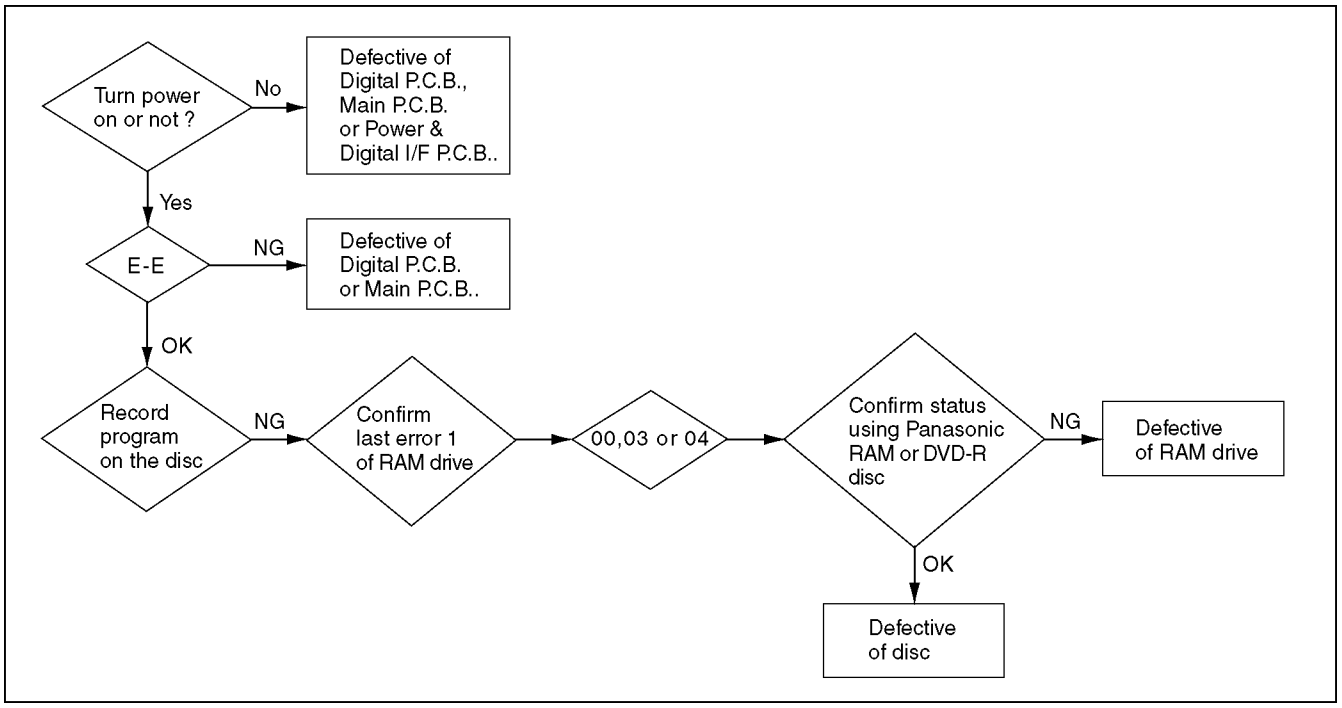
   * Schematic Diagram, Block Diagram and P.C.B. layout of Digital P.C.B.
   * Parts List for individual parts of Digital P.C.B.
   * Exploded View and Parts List for individual parts of RAM drive.

2) The following category are recycle module part. Please send them to Central Repair Center.

   * Digital P.C.B. (ES40VP:VEP79115B, ES40VPC: RFKBES40VPC)
   * RAM drive (VXY1867)

3.2. (DVD) Service Navigation

3.2.1. Flow chart for contirmation



3.2.2. Confirm “RAM-Drive Last Error” in Service Mode

Execute Service Mode

1. Press [VHS to DVD DUBBING], [OPEN/CLOSE] and [STOP] keys simultaneously for 5 seconds when P-off.
   FL Display:

   SM

   *After finishing display “(9). Factor of Drive Error occurring”, press [0] [2] ~[9] [9] keys of the Remote Controller so that 99 memories can be displayed as maximum.
2. Press [4] [2] keys of remote controller.

   Example of FL Display:

   (1) Error Number is displayed for 5 seconds.

   NO 01

   (2) Time when the error has occurred (1/2) is displayed for 5 seconds.

   050216

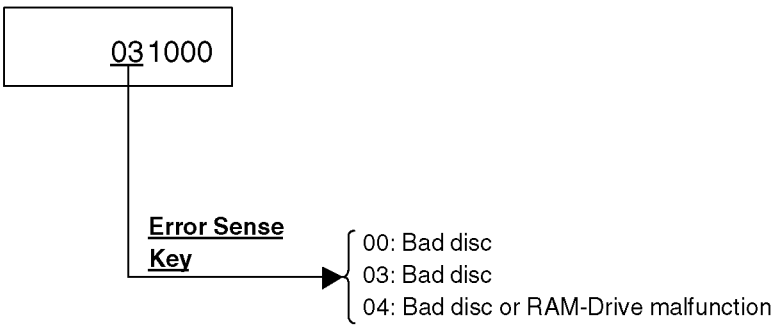
   The error has occurred at 2005(year)/Feb.(month)/16(day)

   (3) Time when the error has occurred (2/2) is displayed for 5 seconds.

   191526

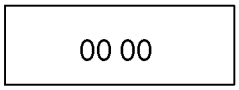
   19(hour):15(minute):26(second)

   (4) Last Drive Error code No.1 is displayed for 5 seconds.

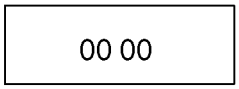
When above error codes are displayed, confirm operation with Panasonic RAM disc or Panasonic DVD-R disc.
***If the operation is OK, judge the error is due to media.**
***If the operation is NG and symptom as BLOCK NOISES and so on that are particular symptom of Digital appears, judge the error is due to RAM-Drive or Digital PCB.**

(5) Last Drive Error code No2. (1/2) is displayed for 5 seconds.



*This error code is unnecessary for service.

(6) Last Drive Error code No2. (2/2) is displayed for 5 seconds.



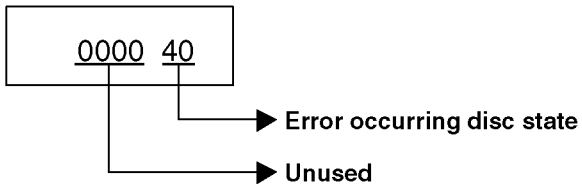
*This error code is unnecessary for service.

(7) Error occurring Disc type is displayed for 5 seconds.

DISC 1: DVD
DISC 2: CD
DISC 3: DVD - RAM 2.6GB
DISC 4: DVD - RAM 4.7GB
DISC 5: DVD - R
DISC : Unknown Disc

(8) Unused (No display).

(9) Factor of Drive Error occurring is left displayed



Error Occurring Disc State

FL Displays (Hexadecimal)	Description			
	Disc distinction state	Cartridge disc state	Cartridge disc state	Disc size
00	OK	With cartridge	Has not been opened yet.	12 cm
10	OK	With cartridge	Has not been opened yet.	8 cm
20	OK	With cartridge	Has been opened.	12 cm
30	OK	With cartridge	Has been opened.	8 cm
40	OK	Bare	Has not been opened yet.	12 cm
50	OK	Bare	Has not been opened yet.	8 cm
60	OK	Bare	Has been opened.	12 cm
70	OK	Bare	Has been opened.	8 cm
80	NG	With cartridge	Has not been opened yet.	12 cm
90	NG	With cartridge	Has not been opened yet.	8 cm
A0	NG	With cartridge	Has been opened.	12 cm
B0	NG	With cartridge	Has been opened.	8 cm
C0	NG	Bare	Has not been opened yet.	12 cm
D0	NG	Bare	Has not been opened yet.	8 cm
E0	NG	Bare	Has been opened.	12 cm
F0	NG	Bare	Has been opened.	8 cm

4 Specifications

Specifications

Power Supply		AC 120 V, 60 Hz
Power Consumption		29 W (Approx. 10 W in start stand by mode)
DVD	**DVD Recording format:**	DVD-RAM: DVD Video Recording format DVD-R,DVD-RW: DVD Video format Video: MPEG2 (Hybrid VBR) Audio: Dolby Digital (XP/SP/LP/EP)
	Optical pickup:	System with 1 lens, 2 integration units (wavelength: 662 nm for DVDs, 780 nm for CDs)
	Recording disc:	DVD-RAM: Ver 2.0 DVD-RAM: Ver 2.1 /3X-SPEED DVD-RAM Revision 1.0 DVD-RAM: Ver 2.2 /5X-SPEED DVD-RAM Revision 2.0 DVD-R: for General ver 2.0 DVD-R: for General ver 2.0 /4X-SPEED DVD-R Revision 1.0 DVD-R: for General ver 2.x /8X-SPEED DVD-R Revision 3.0 DVD-RW: Ver 1.1 DVD-RW: Ver 1.1 /2X-SPEED DVD-RW Revision 1.0 DVD-RW: Ver 1.2 /4X-SPEED DVD-RW Revision 2.0 +R: Ver 1.0 +R: Ver 1.1 +R: Ver 1.2
	Recording mode/ recording time:	XP: approx. 10 Mbps/ approx. 60 min SP: approx. 5 Mbps/ approx. 120 min LP: approx. 2.5 Mbps/ approx. 240 min EP: approx. 1.7/1.2 Mbps/approx. 360/480 min (with 4.7 GB disc)
	Playable discs:	DVD-RAM, DVD-R, DVD-RW, +R, +RW DVD-Video, Video CD, CD-Audio (CD-DA), CD-R/RW (MP3, CD-DA, Video CD, JPEG formatted discs)
	Others:	Region code : 1
	Video interface Output:	**Phono** : CVBS: 1 Vp-p Zout: 75 ohm **S-Video** : Y: 1 Vp-p, C: 0.286 Vp-p Zout: 75 ohm **RCA (YPBPR)** : Y: 1 Vp-p, PB: 0.7 Vp-p, PR: 0.7 Vp-p Zout: 75ohm
	Audio interface:	**Input:** **L1: Phono:** Standard: 309m Vrms, FS: 2 Vrms at 1 kHz Zin: 22 k **L2: Phono:** Standard: 309m Vrms, FS: 2 Vrms at 1 kHz Zin: 22 k **Output:** **Phono:** Standard: 309m Vrms, FS: 2 Vrms at 1 kHz Zout: less than 1 k ohm, Load: 10 k ohm **Digital Audio:** Optical Output connector (PCM, Dolby Digital, DTS)
	Video data:	**Horizontal resolution:** More than XP : 500 lines SP: 500 lines LP : 500 lines EP: 250 lines **Signal to Noise Ratio:** More than 45 dB **Frequency Response:** XP, SP: 0±3 dB at 4 MHz (0 dB at 0.1 MHz), (Fine mode) LP, EP: 0±3 dB at 2 MHz (0 dB at 0.1 MHz), (Fine mode)
	Audio data:	**Dynamic Range:** Rec/PB: more than 90 dB DVD-Video PB (with LPCM): more than 96 dB CD PB: more than 96 dB **Frequency Response:** XP, SP, LP, EP (6H mode): 20 Hz–20 kHz (0±3 dB) EP (8H mode): 20 Hz–12 kHz (0±3 dB) **Cross Talk:** More than 60 dB at 1 kHz

LASER Spec.	**Class 1 LASER Product**	**Wave Lengh:** 780 nm (CDs), 662 nm (DVDs) **Laser Power:** No hazardous radiation is emitted with safety protection
VHS	**Recording format:**	VHS Video Cassette System Standard with FM audio
	Heads:	4 helical scan heads for video 2 helical scan heads for FM audio 1 fixed head for Normal audio
	Recording modes/ recording time:	NTSC SP: 33.35 mm/s, 120min NTSC EP: 11.12 mm/s, 360 min (with T-120 cassette)
	Audio interface:	**Input:** **L1:** **Phono** : 309mVrms Zin: 22 kohm **L2:** **Phono** : 309mVrms Zin: 22 kohm
DVD / VHS Common	**Video interface:**	**TV system** : NTSC system, 525 lines, 60 fields **Input:** **L1:** **Phono** : CVBS: 1 Vp-p, Zin: 75 ohm **S-Video** : Y: 1 Vp-p, C: 0.286 Vp-p, Zin: 75ohm **L2:** **Phono** : CVBS: 1 Vp-p Zin: 75 ohm **S-Video** : Y: 1 Vp-p, C: 0.286 Vp-p, Zin: 75 ohm **Output:** **Phono:** CVBS: 1 Vp-p, Zout: 75 ohm
	Audio interface:	**Output:** **Phono:** **DVD:** Standard: 309mVrms, FS: 2Vrms at 1kHz Zout: less than 1 k ohm, Load: 10 k ohm **VHS:** 309mVrms, Zout: less than 1 k ohm, Load: 10 k ohm
	Tuner RF:	**Tuner system:** NTSC-M **Channel coverage:** VHF: 2ch - 13 ch 75 ohm UHF: 14ch - 69ch 75 ohm CATV: 5A & A - 5ch - EEEch 75 ohm One tuner (DVD and VCR common use) **RF converter:** 3 / 4ch 75 ohm
DV Input		IEEE 1394 Standard, 4pin
Dimensions (W) × (H) × (D)		Approx. 430 (W) × 89 (H) × 353 (D) mm [Approx. 16 15/16 "(W) × 3 8/16" (H) × 13 "14/16" (D)]
Mass		Approx. 5.4 kg (12.0 lbs)
Operating Temperature		5 ˚C - 40 ˚C (41 ˚F - 104 ˚F)
Operating Humidity		35%–80% RH (no condensation)
Clock unit		Quartz - Controlled 12 - hour digital display
Solder		This model uses lead free solder (PbF).

Notes: Mass and dimensions are approximate.

Specifications are subject to change without notice.

5 Features

5.1. Quick start function (REC)

1. General

A few seconds after tuning on the unit,you can start recording to DVD-RAM.

You can switch the operation of this function (ON/OFF) on the menu screen.

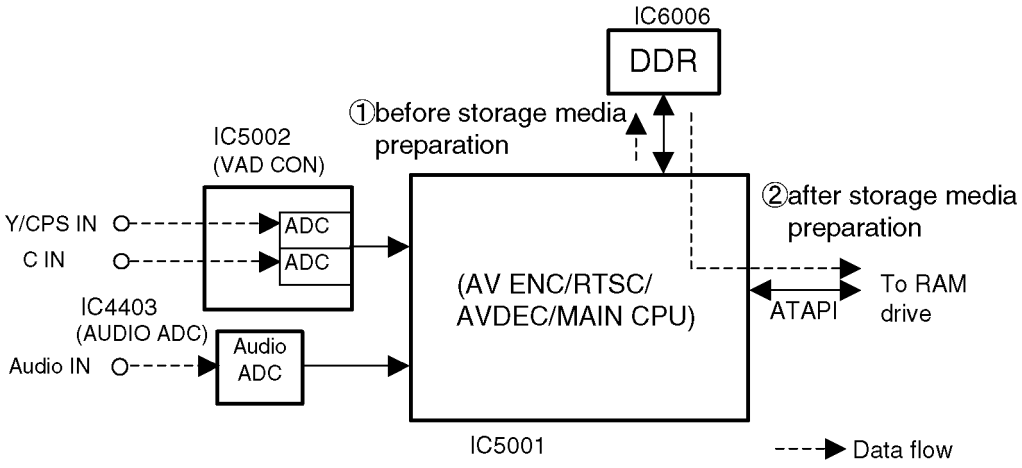
2. Quick start(REC) principle

In the power-off at Quick start, only power supplies for video IC,tuner and storage media are cut off.

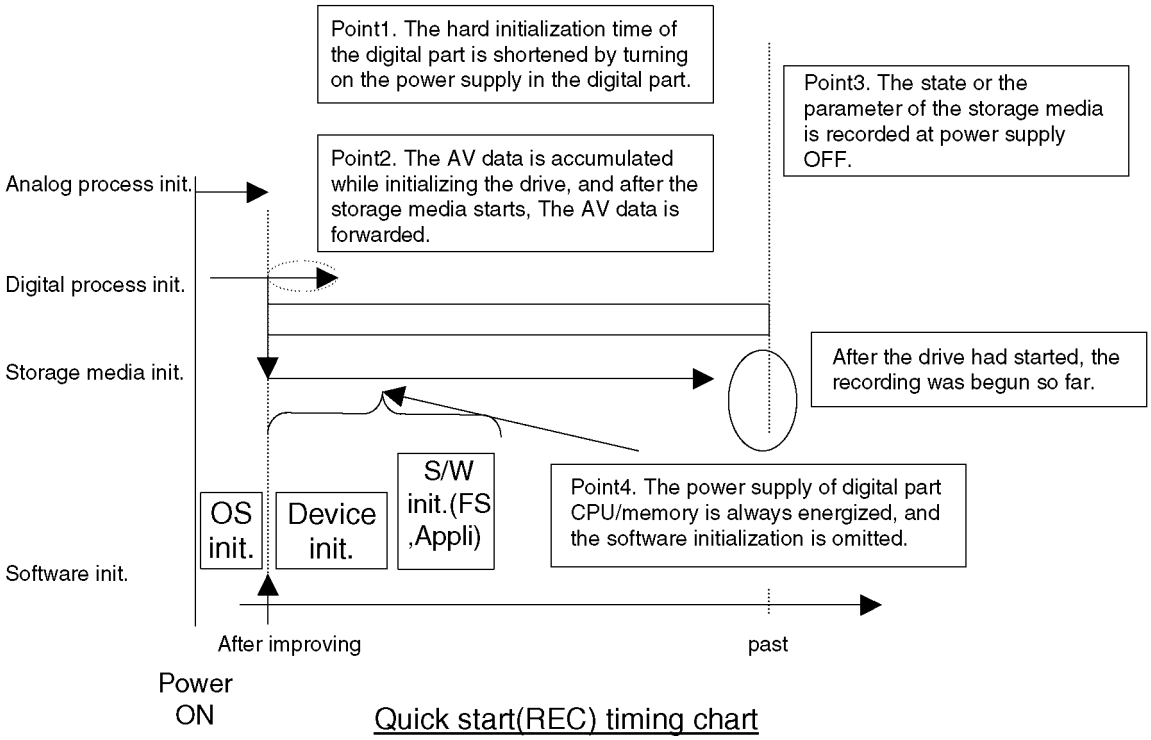
① When the REC button is pushed a few second after the power button is pushed, Audio and Video data are stored in DDR SDRAM before a storage media (DVD-RAM) preparation.

*Preparation time → DVD-RAM: About 8seconds

②After a storage media (DVD-RAM) preparation,Audio and Video data are transfer from DDR SDRAM to the storage media.



Quick start(REC) explanation chart

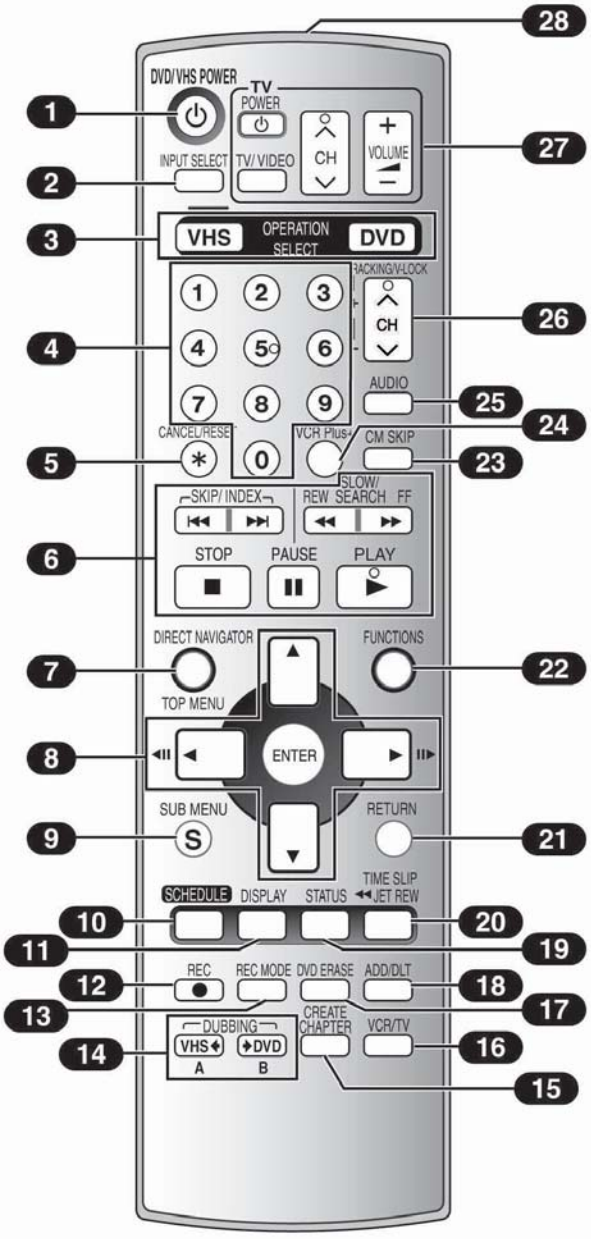


Quick start(REC) timing chart

6 Location of Controls and Components

6.1. Each Buttons

Remote control



■[VHS] and [DVD] button

[DVD]

- Before performing DVD operations, be sure to press the [DVD] button. Also, make sure the DVD indicator lights up on the unit.

[VHS]

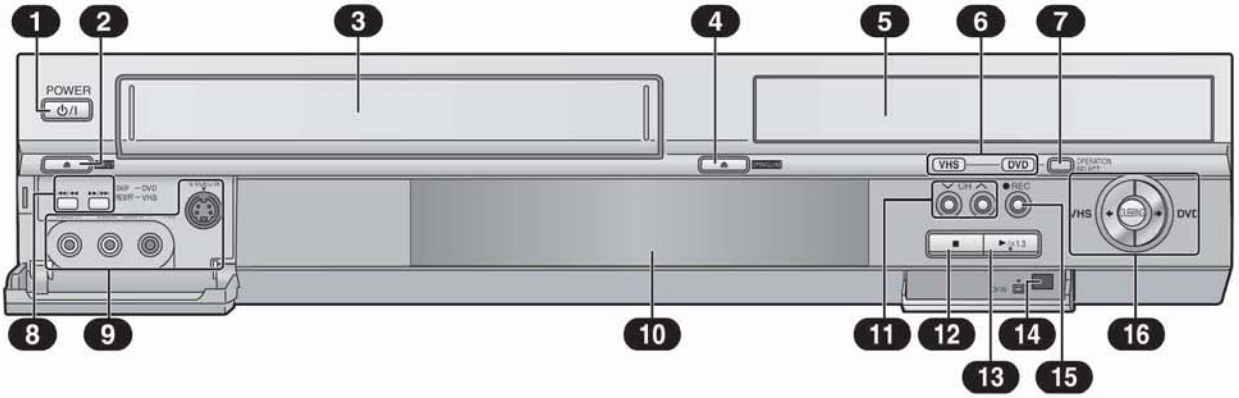
- Before performing VHS operations, be sure to press the [VHS] button. Also, make sure the VHS indicator lights up on the unit.

1. **Turn the unit on**
2. **Input select (IN1, IN2 or DV)**
3. **Select drive (DVD or VHS)**
4. **Select channels and title numbers etc./Enter numbers**
5. **Cancel/Reset the tape counter**
6. **Basic operations for recording and play**
7. **Show Top menu/Direct Navigator**
8. **Selection/Enter, Frame-by-frame**
9. **Show sub menu**
10. **Show scheduled recording list**
11. **Show on-screen menu**
12. **Start recording**
13. **Change recording mode**
14. **One touch transfer (dub) (◗ DVD, VHS ◖)**
    View select (A, B)
15. **Create chapters**
16. **Select VCR/TV**
17. **Erase items**
18. **Add/delete channel**
19. **Show status messages**
20. **Skip the specified time/**
    Display the TV image as a picture-in-picture
    Jet rewind button (JET REW)
21. **Return to previous screen**
22. **Show FUNCTIONS window**
23. **Skip a minute forward**
24. **Show VCR Plus+ screen**
25. **Select audio**
26. **Channel select/**
    TRACKING/V-LOCK
27. **TV operations**
28. **Transmission window**

Note

- Buttons such as the [●, REC] button do not protrude as much as other buttons to stop them from being pressed accidentally.
- The word “button” is not used in these operating instructions so “Press the [ENTER] button.” is shown as “Press [ENTER].”
- You can use this remote control to operate your TV if you set the TV manufacturer code.

Main unit



1 Remote control signal sensor/
DVD/VHS POWER on/off button (⏻/I, POWER)
- To switch the unit from on to standby mode or vice versa. In the standby mode, the unit is still consuming a small amount of power.

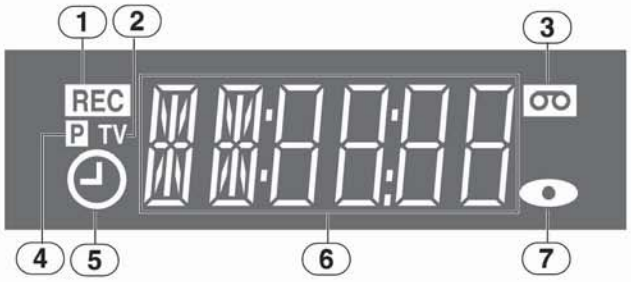
2 Cassette eject button (⏏, EJECT)
3 Cassette compartment
4 Disc tray open/close button (⏏, OPEN/CLOSE)
5 Disc tray
6 DVD/VHS drive indicator
- Lights when the DVD or VHS drive is selected.

7 Operation select button
8 DVD–SKIP, VHS–REW/FF buttons
(|◀◀/◀◀, ▶▶/▶▶|)
9 IN2 input terminals (IN2)
10 The unit's display
11 Channel up/down buttons (CH, ∧, ∨)
12 Stop button (■)
13 Play/×1.3 button (▶/×1.3)
14 DV IN
15 Recording button (●, REC)
16 One Touch Transfer (Dubbing) operation button
- **From VHS to DVD**
- **From DVD to VHS**

■ Off Timer

The unit automatically switches to standby when it has not been used for about 6 hours.
You can turn this feature off or change the time to 2 hours.
(➜ 41, "Off Timer")

■ The unit's display



(1) Recording indicator
- The recording indicator for the drive selected. When the power is off, it doesn't matter which drive is selected.

On: During recording
Flashes: During pause recording

(2) TV indicator
- The indicator lights during the TV mode and it goes out during the VCR mode. You can switch the mode by using [VCR/TV].

(3) Tape indicator
(4) Progressive indicator
- The indicator lights during outputting in progressive.

(5) Scheduled recording indicator (🕘)
- The scheduled recording indicator for the drive selected. When the power is off, it doesn't matter which drive is selected.

On:
When a scheduled recording program is registered and recordable disc or tape is inserted.
Flashes:
When it turns out that the unit cannot record a scheduled recording program (e.g. there is no disc or tape, etc.) in the period between 2 minutes before the scheduled recording program starts and the end of the scheduled recording program.

(6) Main display
Digital Clock, Counter etc...
(7) Disc indicator

7 Operation Instructions

7.1. (DVD) Taking out the Disc from RAM-Drive Unit when the Disc cannot be ejected by OPEN/CLOSE button

7.1.1. (DVD) Forcible Disc Eject

7.1.1.1. (DVD) When the power can be turned off.

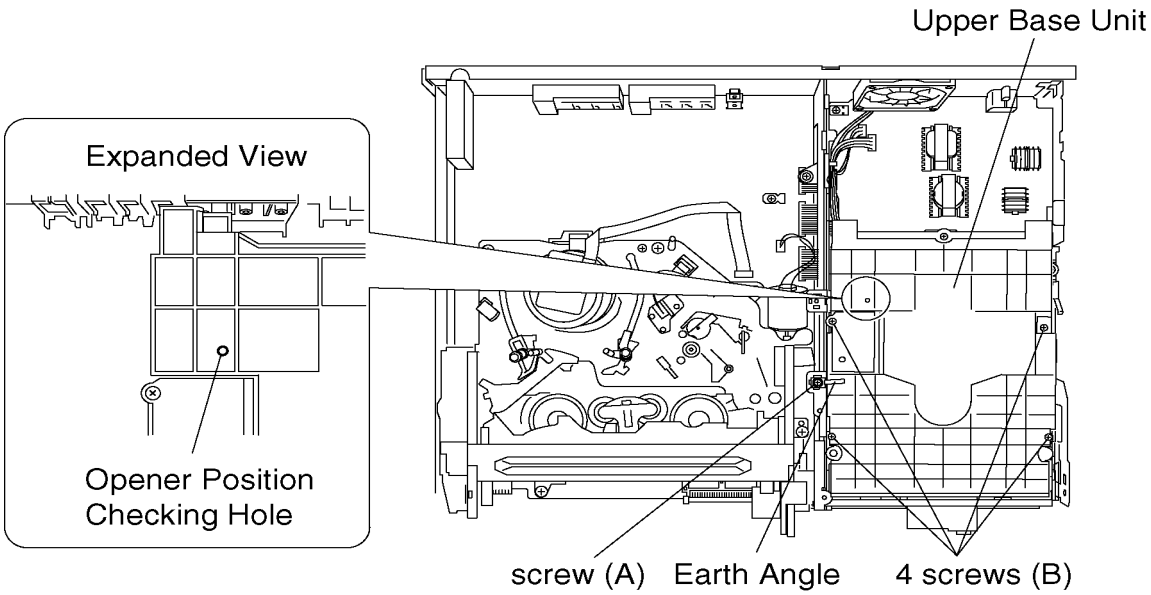
1. Turn off the power and press [STOP], [CH UP] keys on the front panel simultaneously for 5 seconds.

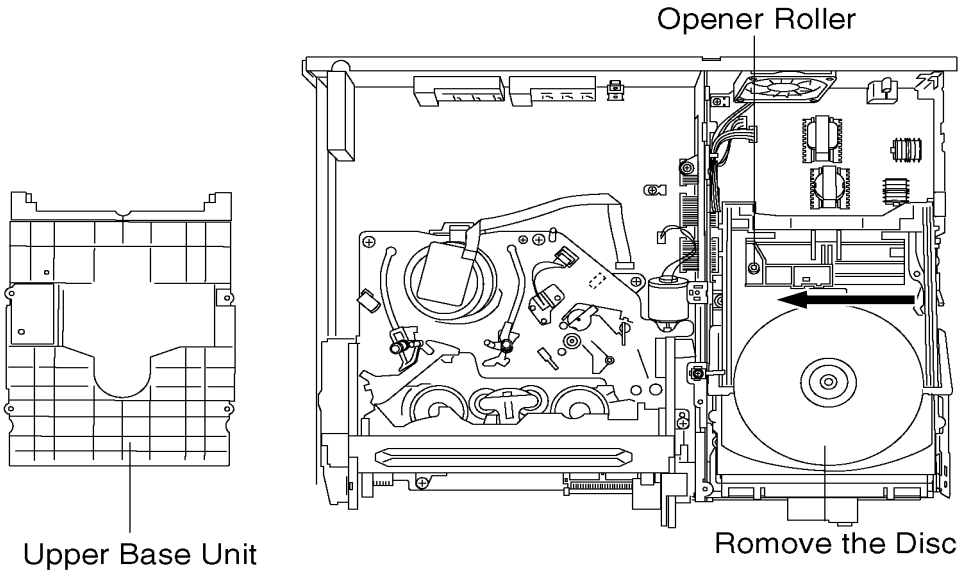
7.1.1.2. (DVD) When the power can not be turned off.

1. Press [POWER] key on the front panel for over 10 seconds to turn off the power forcibly, and press [STOP] [CH UP] keys on the front panel simultaneously for 5 seconds.

7.1.2. (DVD) When the Forcible Disc Eject can not be done.

1. Turn off the power and pull out AC cord.
2. Remove the Top Case.
3. Remove the Front Panel.
4. Remove screw (A) and Earth Angle.
5. Remove 4 screws (B) and Upper Base Unit from DVD-RAM Drive.
6. Take out the disc and put the Opener Roller on fully position for direction of Arrow.
7. Put the Upper Base Unit so that the Opener Roller is inserted into the groove.
8. Check center of Opener Roller is seen through the Opener position Checking Hole, and tighten 4 screws (B).





7.2. (VHS) Removing Cassette Tape manually

When the cassette tape could not be uninstalled from an electrical malfunction, there are 2 ways to remove a cassette tape.

7.2.1. (VHS) Removal by compulsory unloading.

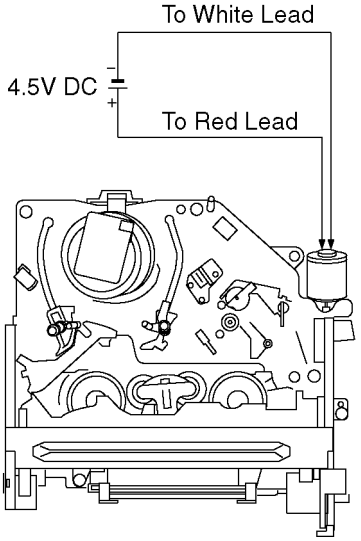
If Service Mode can be activated when the power can not be turned on, this operation is able.

1. Press [FF] and [EJECT] button simultaneously for more than 3 seconds and set the Service Mode to 7.
2. Press [STOP] button in order to unload the mechanism. (Pay attention to tape slack)
   Service Mode Display:
   7 ** ** (STOP) → 7 0L ** (EJECT)

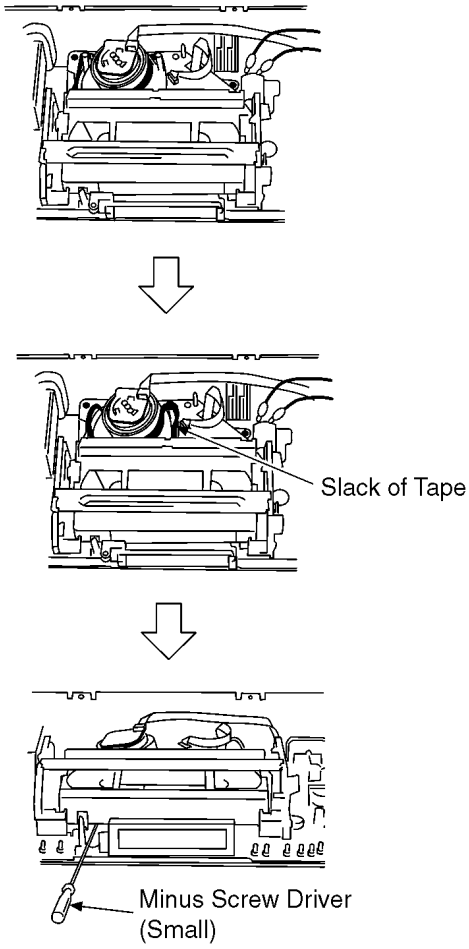
7.2.2. (VHS) Removal by manual operation by rotating the Loading Motor with the batteries.

1. Disconnect the AC plug, and remove the Top Panel and the Front Panel by referring to the Disassembly Procedures.
2. Connect three batteries (1.5V spec.) to the Loading Motor in series for supplying 4.5V to rotate the Loading Motor as shown below.

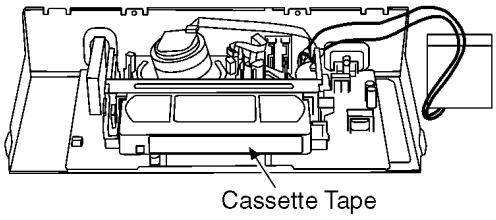
CONNECTION for UNLOADING



3. Stop unloading just before unloading will be completed as shown below, and then the tape becomes slack as shown below.
4. Rotate the S-Reel by a small minus screwdriver to remove the slack tape as shown below.

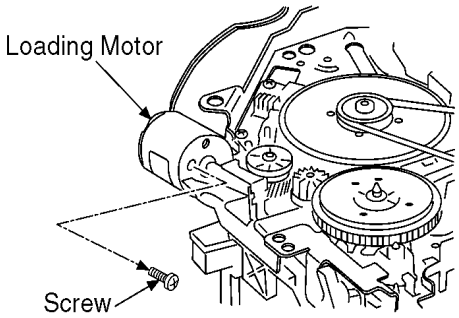


5. Then unload again to remove the cassette tape as shown below.

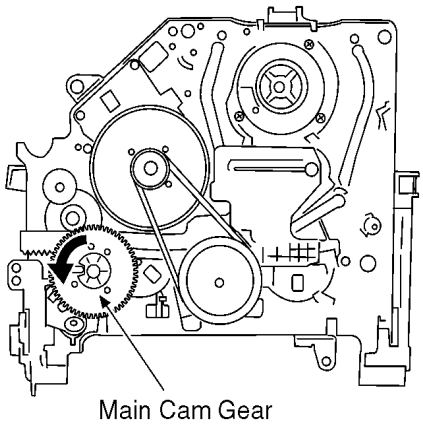


7.2.3. (VHS) Take out Cassette Tapemanually after removing the mechanism

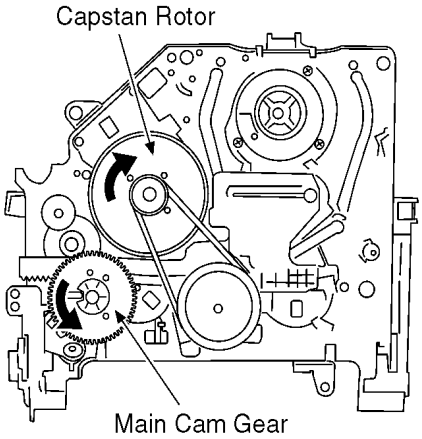
1. Disconnect the AC plug, and remove the Top Panel, Front Panel and the Mechanism by referring to **"14 Assembling and Disassembling"**
2. Remove the Screw and remove the Loading Motor as shown below.



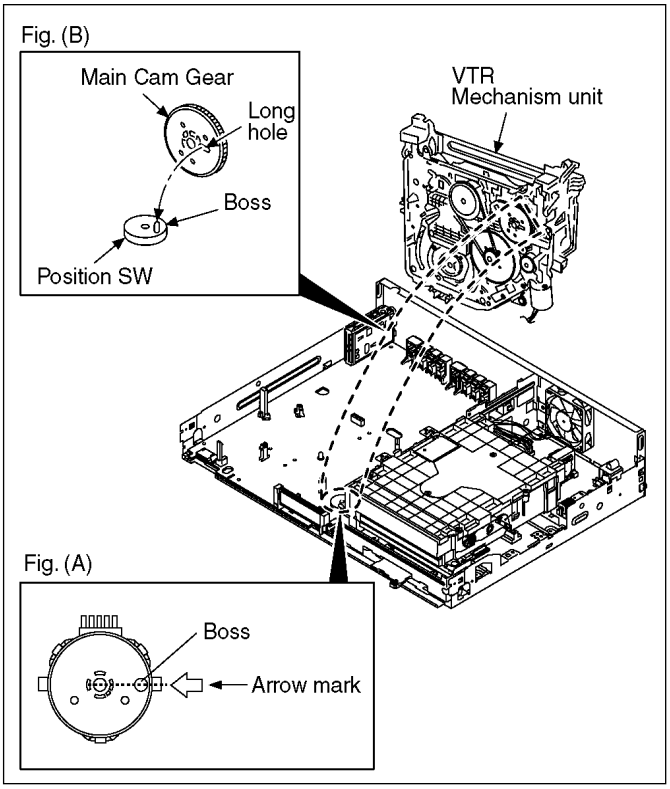
3. Rotate the Main Cam Gear counter-clockwise until just before the unloading will be completed as shown below. .



4. Rotate the Capstan Motor clockwise to remove the slack tape as shown below.
5. Rotate the Main Cam Gear counter-clockwise again to remove the cassette-tape as shown below.



6. Attach Loading Motor and tighten the screw.
7. Set the Position Switch to EJECT POSITION certainly and attach the mechanism to chassis as shown below.



8 Service Mode

8.1. (DVD) Self-Diagnosis and Special Mode Setting

8.1.1. (DVD) Self-Diagnosis Functions

Self-Diagnosis Function provides information for errors to service personnel by “Self-Diagnosis Display” when any error has occurred.

U, H** and F** are stored in memory and held.**

Display on FL will be cancelled when the power is turned off or AC input is turned off during self-diagnosis display is ON.

You can check latest error code by transmitting [0] [1] of Remote Controller in Service Mode.

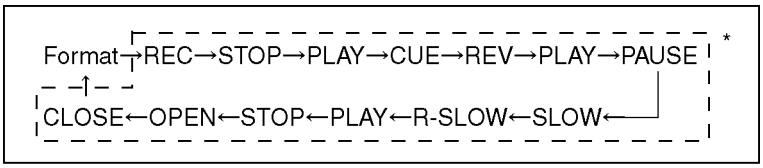
Automatic Display on FL will be cancelled when the power is turned off or AC input is turned off during serf-diagnosis display is ON.

Error Code	Diagnosis contents	Description	Monitor Display	Automatic FL display
U30	Remote control code error	Display appears when main unit and remote controller codes are not matched.	No display	RC * “*” is remote controller code of the main unit. Display for 5 seconds.
U59	Abnormal inner temperature detected	Display appears when the drive temperature exceeds 70°C. The power is turned off forcibly. For 30 minutes after this, all key entries are disabled. (Fan motor operates at the highest speed for the first 5 minutes. For the remaining 25 minutes, fan motor is also stopped.) The event is saved in memory as well.	No display	U59 “U59 is displayed for 30 minutes.
U99	Hang-up	Displayed when communication error has occurred between Main microprocessor and Timer microprocessor.	No display	U99 Displayed is left until the [POWER] key is pressed.
F00	No error information	Initial setting for error code in memory (Error code Initialization is possible with error code initialization and main unit initialization.)	No display	No display
F58	Drive hardware error	When drive unit error is detected, the event is saved in memory.	No display	No display
F34	Initialization error when main microprocessor is started up for program recording	When initialization error is detected after starting up main microprocessor for program recording, the power is turned off automatically. The event is saved in memory.	No display	No display
UNSUP-PORT	Unsupported disc error	*An unsupported format disc was played, although the drive starts normally. *The data format is not supported, although the media type is supported. *Exceptionally in case of the disc is dirty.	**“This disc is incompatible.”**	Err Display for 5 seconds.
NO READ	Disc read error	*A disc is flawed or dirty. *A poor quality failed to start. *The track information could not be read.		
HARD ERR	Drive error	The drive detected a hard error.	No display	Display for 5 seconds. Err
SELF CHECK	Restoration operation	Since the power cord fell out during a power failure or operation, it is under restoration operation. *It will OK, if a display disappears automatically. If a display does not disappear, there is the possibility that defective Digital P.C.B. / RAM drive.	No display	□□□□□□
UNFOR-MAT	Unformatted disc error	You have inserted an unformatted DVD-RAM or DVD-RW that is unformatted or recorded on other equipment.	This disc is not formatted propfrly. Do you want to format the disc in Disc Management?	Err

Error Code	Diagnosis contents	Description	Monitor Display	Automatic FL display
PLEASE WAIT	Unit is in termination process	Unit is in termination process now. "BYE" is displayed and power will be turned off. In case "Quick Start" of setup menu is ON, it is displayed in restoration operation for AC off.	No display	□□□□□□
F60	DVD module has not been started.	Defect of Digital P.C.B. Mode: No change	No display	F60
F09	Serial Communication Error between VHS Microprocessor and Timer Microprocessor.	Please confirm Serial Communication terminal of Microprocessor. **NOTE:** If F09 appears just after updating Firmware, pull off and insert AC plug, then it will disappear.	No display	F09

8.1.2. (DVD) Special Modes Setting

Item		FL display	Key operation
Mode name	Description		Front Key
TEST Mode	*All the main unit's parameters (include tuner) are initialized.	TM L1	Press [VHS to DVD DUBBING], [REC] and [OPEN/CLOSE] keys simultaneously for five seconds when power is off.
Service Mode	Setting every kind of modes for servicing. *Details are described in "**8.1.3. Service Mode at a glance**".	SM	When the power is off, press [VHS to DVD DUBBING], [OPEN/CLOSE] and [STOP] keys simultaneously for 5 seconds.
Forced disc eject	Removing a disc that cannot be ejected. The tray will open and unit will shift to P-off mode. *When Timer REC is ON, execute " Forced disc eject " after releasing Timer REC. While Demonstration Lock is being set, this Forced disc eject function is not accepted. If this command was executed while TIMER REC is being set, TIMER REC setting will turn to OFF.	The display before execution leaves. ******	When the power is off, press [STOP] and [CH UP] keys simultaneously for 5 seconds.
Forced power-off	When the power button is not effective while power is ON, turn off the power forcibly. *When Timer REC is ON, execute "Forced Power-off" after releasing Timer REC.	Display in P-off mode.	Press [Power] key over than 10 seconds.
Aging	Perform sequence of modes as * Aging Description shown below continually. **Caution:** **All programs in DVD-RAM disc will be deleted because Formatting is done once in Aging process.**	Display following the then mode.	When the power is ON, press [CH DOWN], [VHS to DVD DUBBING] and [OPEN/CLOSE] simultaneously for over 5 seconds and less than 10 seconds. **NOTE1:** If Unit has not turned into Aging mode by operations shown above, execute TEST MODE once and re-execute operation shown above. (*All the main unit's parameters include tuner are initialized by TEST mode.) **NOTE2:** If the unit has hung-up because of pressing keys for over 10 seconds, once turn off the power, and re-execute this command. *When releasing Aging mode, press [POWER] key.

Item		FL display	Key operation
Mode name	Description		Front Key
Aging Contents (Example):  *XP mode ・・・・・repeat twice SP mode ・・・・・repeat 4 times LP mode ・・・・・repeat 8 times EP mode ・・・・・repeat 12 times			
Demonstration lock/ unlock	Ejection of the disc is prohibited. The lock setting is effective until unlocking the tray and not released by “Main unit initialization” of service mode.	*When lock the tray. LK On “LOCK” is displayed for 3 seconds.	When the power is on, press [STOP] and [POWER] keys simultaneously for 5 seconds.
		*When unlock the tray. LK OFF “UNLOCK” is displayed for 3 seconds.	When the power is on, press [STOP] and [POWER] keys simultaneously for 5 seconds.
		*When press OPEN/CLOSE key while the tray being locked. LK On Display “LOCK” for 3 seconds.	Press [OPEN/CLOSE] key while the tray being locked.
ATP Initialization	ATP setting is initialized, and the unit turns off automatically.	It is same with display in stop mode. INI	When the power is on (E-E mode), press [CH UP] and [CH DOWN] simultaneously for 5 seconds.
Progressive initialization	The progressive setting is initialized to Interlace.	The display before execution leaves. ******	When the power is on (E-E mode), press [STOP] and [VHS to DVD DUBBING] simultaneously for 5 seconds.

8.1.3. (DVD) Service Modes at a glance

Service mode setting: While the power is off, press **[STOP], [VHS to DVD DUBBING] and [OPEN / CLOSE]** simultaneously for five seconds (OPERATION SELECT should be set to DVD).

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
Release Items	Item of Service Mode executing is cancelled.	SM	Press [0] [0] or [Return] in service mode.
Error Code Display	Last Error Code of U/H/F held by Timer is displayed on FL. *Details are described in **"8.1.1. Self-Diagnosis Functions".**	♣□□ *♣ shows U/H/F. □□ shows number.	Press [0] [1] in service mode
ROM Version Display	Region code, MAIN firm version, TIMER firm version, DRIVE firmware versions and VHS Microprocessor version are displayed on FL for five seconds per each version in order, but VHS ROM correction version will be left displayed.	Region code * MAIN firm version ****** TIMER firm version ****** DRIVE firm version **** ROM version * *** VHS Microprocessor version **** VHS ROM correction version ** '' * '' are version displays.	Press [0] [2] in service mode
White Picture Output	White picture is output as component Output from AV Decoder. *White picture (Saturation rate : 100%) *It is enable to switch Interlace/Progressive by "I/P switch: [1] [4]"	*Initial mode is "Interlace". WH it	Press [1] [1] in service mode.
		Switch Interlace/Progressive WHit P	Press [1] [4] in White Picture Output mode. *I/P are switched alternately.
Magenta Picture Output	Magenta picture is output with Component Output from AV Decoder. *Magenta picture (Saturation rate: 100%) *It is enable to switch Interlace/Progressive by "I/P switch: [1] [4]"	*Initial mode is "Interlace". MAGE	Press [1] [2] in service mode.
		Switch Interlace/Progressive MAGE P	Press [1] [4] in Magenta Picture Output mode. *I/P are switched alternately.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
RTSC Return in XP (A & V)	L1 input signal is encoded (XP), decoded (XP) and output decoded signal to external without DISC recording and DISC playback.	Initial mode: EE2/ Interlace/ XP/ Audio 48kHz EE248	Press [1] [3] in service mode.
		Switch Interlace/Progressive EE248P	Press [1] [4] in RTSC Return XP mode. *I/P are switched alternately.
I/P Switch	Switch Interlace and Progressive in EE mode. *Initial setting is “Interlace”. *This command is effective during executing “White Picture Output”, “Magenta Picture Output” and “RTSC Return in XP (A & V)” modes.	Initial mode is Interlace SM I Switch Interlace/Progressive SM P	Press [1] [4] in I/P Switch mode. *I/P are switched alternately.
Audio Mute (XTMUTE)	Check whether mute is applied normally by the timer microprocessor.	XT	Press [2] [1] in service mode.
Audio Mute (XDMUTE)	Check whether mute is applied normally by the Digital P.C.B..	XD	Press [2] [2] in service mode.
Audio Pattern Output	The audio pattern stored in the internal memory is output (Lch: 1kHz/-18dB) (Rch: 400Hz/-18dB) *Audio sound clock switching operation of DAC can be confirmed by sub command [2] [4].	Initial mode (Audio 48kHz) AU 48	Press [2] [3] in service mode.
		Audio 44.1kHz/48kHz switching AU 44	Press [2] [4] in Audio Pattern Output mode. *48 kHz / 44.1 kHz are switched alternately.
Laser Used Time Indiction	Check laser used time (hours) of drive.	***** I(*****) is the used time display in hour. ILaser used time of DVD/ CD in Playback/Recording mode is counted.	Press [4] [1] in service mode.
Delete the Laser Used Time	Laser used time stored in the memory of the unit is deleted.	CLr 1	Press [9] [5] in service mode.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
RAM Drive Last Error	RAM Drive error code display. *For details about the drive error code, refer to the Service Manual for the specific RAM Drive. *Details are described in "**3.2.2. Confirm "RAM-Drive Last Error" in Service Mode".**	1. Error Number is displayed for 5 seconds. NO ** 2. Time when the error has occurred (1/2) is displayed for 5 seconds. YYMMDD YY: Year MM: Month DD: Day 3. Time when the error has occurred (2/2) is displayed for 5 seconds. hhmmss hh: Hour mm: Minute ss: Second 4. Last Drive Error code No.1 is displayed for 5 seconds. ****** 5. Last Drive Error code No.2 (1/2) is displayed for 5 seconds. **** 6. Last Drive Error code No.2 (2/2) is displayed for 5 seconds. **** 7. Error occurring Disc type is displayed for 5 seconds. DISC * DISC 1: DVD DISC 2: CD DISC 3: DVD-RAM 2.6GB DISC 4: DVD-RAM 4.7GB DISC 5: DVD-R DISC : Unknown Disc 8. Unused (No display) 9. Factor of Drive Error occurring is left displayed ******	Press [4] [2] in service mode. When "INFO******" is being displayed, past 99 error histories can be displayed by pressing [0] [1] - [9] [9]
Delete the Last Drive Error	Delete the Last Drive Error information stored on the DVD RAM-Drive.	CLr 2	Press [9] [6] in service mode.
Turn on all FL/LEDs	All segments of FL and all LEDs are turned on.	All segments are turned on.	Press [5] [1] in service mode.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
S1 signal output	Forcibly superimpose the S1 signal (approx. 4.5V DC) on the EE chroma signal, and check the output on the S terminal.	S1	Press [5] [2] in service mode.
S2 signal output	Forcibly superimpose the S2 signal (approx. 2V DC) on the EE chroma signal, and check the output on the S terminal.	S2	Press [5] [3] in service mode.
Front connection inspection	Press all front keys and check the connection between Main P.C.B. and Front key Switches.	0r ** (1) (2) (1) Each time a key is pressed, segment turned on increases one by one. (2) Total umber of keys that have been pressed.	Press [5] [4] in service mode.
Display the accumlated working time	Display the accumulated unit's working time.	****** (Indicating unit: hour)	Press [6] [4] in service mode.
Delete the Error History	Delete Error History information stored on the unit.	CLr 3	Press [9] [7] in service mode.
Tray OPEN/CLOSE Test	The RAM drive tray is opened and closed repeatedly.	****** "*" is number of open/close cycle times.	Press [9] [1] in service mode *When releasing this mode, pull off AC plug.
Error code initialization	Initialization of the last error code held by timer (Write in F00)	CLr 4	Press [9] [8] in service mode.
Initialize Service	Last Drive Error, Error history and Error Codes stored on the unit are initialized to factory setting.	CLr S	Press [9] [9] in service mode.
Finishing service mode	Release Service Mode.	Display in STOP (E-E) mode. ******	Press power button on the front panel or Remote controller in service mode.

8.2. (VHS) Self-Diagnosis and Special Mode Setting

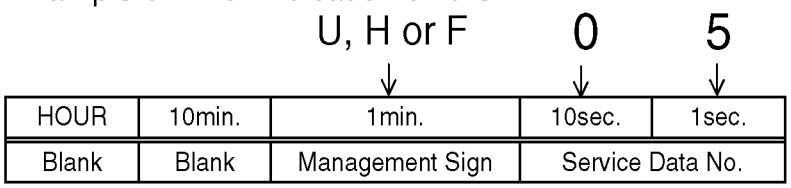
8.2.1. (VHS) Self-Diagnosis Functions

This model has a self-diagnosis and display function. If the VHS section detects trouble during installation or during use, one of the following Error Codes will automatically appear in the display on VHS side. Error Codes are displayed in the form of a single English letter followed by two numbers, as for example "H01".

Note:

1. The indication "U" is displayed on the FIP while power remains on.
2. The indication "H" or "F" is displayed on the FIP, and the power is automatically turned off. When the power is turned on again, the Error indication code will disappear and the unit will return to normal display mode (either clock or counter is displayed).
3. This Error indication code will be stored in the microprocessor even after the AC plug being disconnected.
   The two-digit number portion of the stored Error indication code can be re-displayed in "second" display portion (the last 2 digits of the FIP) by placing the unit is Service Mode Number 3 When turning on Service Data Display as for example "01" or "02" etc. If a second error occurs, the most recent error will be displayed and stored until 3 self-diagnosis histories in maximum.
4. To erase the stored Error Code data, Press FF and EJECT buttons on VCR simultaneously for over 5 seconds in Service Mode 3.

Example of Error Indication on the FIP



Division of Management

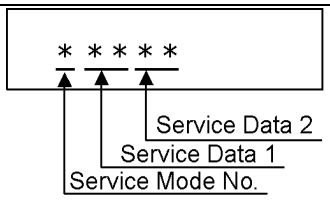
Management Sign	Management Division
U	User can deal with.
H	Shop can deal with.
F	It should be dealt with in service shop.

Error Number at a glance

Memory No. (Error No.)	Reason	Automatic display	Memory
H01	The cylinder could not be started. (Error of the cylinder or the cylinder driver.)	Yes	Yes
H02	The CAP FG could not be detected.	Yes	Yes
F03	Mechanism lock during without the unloading and the cassette-up.	Yes	Yes
F04	Mechanism lock during unloading	Yes	Yes
F05	S-reel pulse cannot be detected when a cassette tape is inserted. (Error of the S-reel system or the Capstan system.)	No	Yes
F06	Mechanism lock during the Cassette-up.	Yes	Yes
F09	Communication Error between VHS Microprocessor (IC6001) and Timer Microprocessor (IC7501)	Yes	Yes
H07	The recording circuit can not be operated in REC mode.	Yes	Yes
H08	The recording circuit is operated in except for REC mode.	Yes	Yes
U11	Cylinder clogs during the PLAY mode.	Yes	Yes
F15	S-reel pulse cannot be detected when a cassette tape is inserted. (Error of the S-reel system or the Capstan system.)	No	Yes
H16	Detection of the Cylinder lock during the constant rotation	No	Yes
H17	Detection of S-reel lock during the constant tape running	Yes	Yes
H18	Detection of T-reel lock during the constant tape running	Yes	Yes
F20	NG1 in the PG Shifter Automatic Adjustment (The cylinder rotation is unstable during the automatic adjustment.)	Yes	Yes
F21	NG2 in the PG Shifter Automatic Adjustment (The vertical sync signal is lacked while over 5 seconds on the alignment tape.)	Yes	Yes
F22	NG3 in the PG Shifter Automatic Adjustment (The installing position of Heads to the cylinder is our of specification.)	Yes	Yes
F23	NG4 in the PG Shifter Automatic Adjustment (The servo is not locked to the cylinder for more than 10 sec.)	Yes	Yes
H80	An exceptional ejection depends on a Error	No	Yes

8.2.2. (VHS) Special Modes Setting

NOTE:
OPERATION SELECT should be set to VHS.

Item		FL display	Key operation
Mode name	Description		Front Key
Tracking Center	Tape Tracking is adjusted to center FIX position.	No display.	During PLAYBACK, press [(VHS) CH UP] and [(VHS) CH DOWN] keys simultaneously.
VHS Service Mode	In order to make service easy, a part of inside information of a microprocessor is displayed on FIP. *Details are described in **"8.2.3. (VHS) Service Mode"**.		Press [FF], and [EJECT] keys simultaneously for 3 seconds when power is off.
Releasing Timer Program	Releasing Continuation Timer Program	No display.	While in Timer REC mode, press [(VHS) STOP] key for 3 seconds.
Eject	Ejecting Cassette Tape	No display.	While in other than Timer REC mode, press [(VHS) STOP] key for 3 seconds or press [STOP] key of the Remote Controller for 3 seconds in VHS mode.

8.2.3. (VHS) Service Modes

<Service Mode Setting>

Set OPERATION SELECT to VHS.

When power is OFF, press [FF] and [EJECT] keys simulta- neously for 3 seconds to into Service Mode.

In Service Mode, press [FF] and [EJECT] keys simultaneously to add Service Number.

8.2.3.1. (VHS) Service Mode and Service Data at a glance

Service Number	Contents	Contents of Indication on minute	Contents of Indication on second	Remarks
0	Indication for the inner data of IC6001	VHS mode (Real time)	Process number (Real time)	
		VCR mode (OPM)	Management number of the processing during mechanism shifting	
1	Indication for the inner data of IC6001	Starting / finishing edges detecting data (Real time)	Data of receiving key (Real time)	
		00: Both starting / finishing edges have not been 01: Starting edge is detecting now 02: Finishing edge is detecting now 03: Both starting / finishing edges are detecting now	Indicate the receiving code when the key of VCR or remote controller being operated.	

Service Number	Contents	Contents of Indication on minute	Contents of Indication on second	Remarks
2	Indication for the inner data of IC6001	Mechanism position (Real time) 0L: EJECT position 02: DOWN position 03: RREW position 04: LOAD position 05: REV position 06: PLAY position 07: POFF position 08: STOP_R position 09: STOP_F position - : FF/REW position - : Intermediate between each positions	Ordering for the Motors (Real time) 0*, 2*: CYL off, CAP off 1*: CYL off, CAP on (fwd) 3*: CYL off, CAP on (rev) 8*, A*: CYL on, CAP off 9*: CYL on, CAP on (fwd) B*: CYL on, CAP on (rev) *0: Motor off *1: Loading *2: Unloading *3: Break (Load + Unload)	There are next conditions in this mode for enable the mechanism operations without a cassette tape. l The starting / finishing edges are not detected. l The reel lock is not detected l The tape and the positions are not detected. , And so on. Press the EJET key for over 3 seconds in this mode, and then the VCR is shifted into the special modes, such as PG Adjustment, Model Code Setting, and so on.
				The orders for the motors are as follows. Bit 7: CYL ON/OFF Bit 6: ---------- Bit 5: CAP FWD/REV Bit 4: CAP ON/OFF Bit 3: ---------- Bit 2: ---------- Bit 1: UNLOADING(H) Bit 0: LOADING(H)
3	Self-diagnosis history (1st)	Error number of history 1	Supplementary data 1 and 2 of history 1.	In the Self-Diagnosis Memory, next 3 BYTE is memorized for an Error. 1 BYTE: Its Error number 2 BYTE: Its supplementary data
4	Self-diagnosis history (2nd)	Error number of history 2	Supplementary data 1 and 2 of history 2.	
5	Self-diagnosis history (3rd)	Error number of history 3	Supplementary data 1 and 2 of history 3.	In these modes, the supplementary data 3 and 4 instead of the Error number and supplementary data 1 and 2 are indicated only while pressing STOP key.
6	Indication for the inner data of IC6001	Real time servo data (4 digits) (Real time)		
		Higher rank 1 BYTE of SERVO data	Lower rank 1 BYTE of SERVO data	
7	Manual mechanism operation	Real time mechanism position 0L: EJECT position 02: DOWN position 03: RREW position 04: LOAD position 05: REV position 06: PLAY position 07: POFF position 08: STOP_R position 09: STOP_F position - : FF/REW position - : Intermediate between each positions	Real time ordering for the Motors 0*, 2*: CYL off, CAP off 1*: CYL off, CAP on (fwd) 8*, A*: CYL on, CAP off 9*: CYL on, CAP on (fwd) B*: CYL on, CAP on (rev) *0: Motor off *1: Loading *2: Unloading *3: Break (Load + Unload)	Press the STOP key, and then the cassette tape is unloaded.

8.2.3.2. Example of FIP

4	0	3	1	2
HOUR	10min.	1min.	10sec.	1sec.
Service No.	Service Data 1		Service Data 2	

8.2.4. (VHS) Self-Diagnosis History Memory Function

8.2.4.1. (VHS) Condition for memorizing of the self-diagnosis history

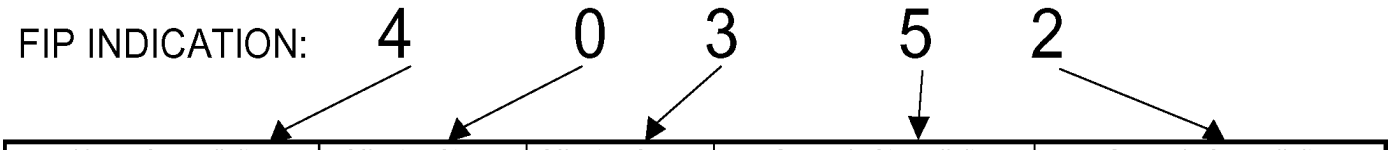
1. The self-diagnosis result and the supplementary data are the condition memorized just as an Error is detected.
2. There are the histories from number 1 to number 3.
3. The latest Error is memorized on history number 1,and then the old histories are shifted to the history number 2, 3.
4. Put out data from the memory number 3 by the shift is deleted.
5. If the latest Error is same with the history number 1 (2nd-latest), it is not memorized.
   (The same Error number is not memorized in succession)

8.2.4.2. (VHS) Condition for clearing the self-diagnosis history

1. A case of that press the FF key and the EJECT key simultaneously over 5 seconds.
2. A case of that the factory jumper (TW1004) is shorted.

8.2.4.3. (VHS) Indication of the self-diagnosis history.

1. The self-diagnosis histories and its supplementary data could be indicated on the FIP with Service mode of number from 3 to 5.
2. The procedure of setting the service mode and the format if the indication are same as usual.

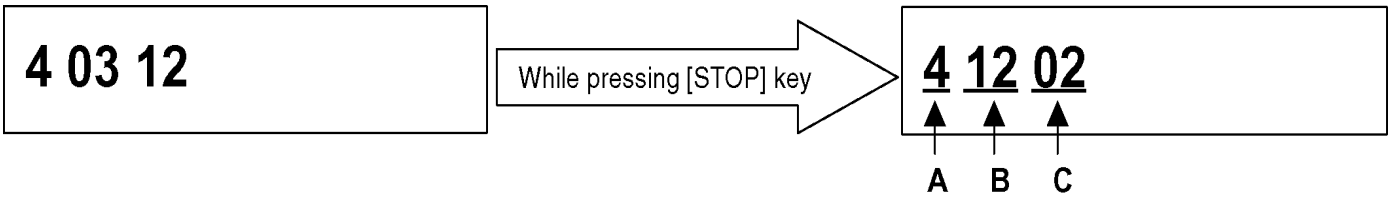


Hour of one-digit	Minute of two-digit	Minute of one-digit	Second of two-digit	Second of one-digit
Service mode number	Error number		Supplementary Data	
3	Number of history 1 (The latest)		Supplementary data 1 of history 1	Supplementary data 2 of history 1
4	Number of history 2 (2nd latest)		Supplementary data 1 of history 2	Supplementary data 2 of history 2
5	Number of history 3 (3rd latest)		Supplementary data 1 of history 3	Supplementary data 2 of history 3

Both the Error numbers and its supplementary data of history 1, 2and 3 are indicated by selecting the Service mode 3, 4 and 5 as shown above.
In case of that any Error has not been memorized, the Error number and its supplementary data is indicated as " - ".

8.2.4.4. (VHS) Display of Supplementary Data 3 and 4

During displaying the Self-Diagnosis History, press [STOP] key on front panel to change the display.
***Example of Display**



A: Service Mode Number.
B: Supplementary Data 3...Mechanism process shifting Number.
C: Supplementary Data 4...LM(Loading Motor information)

*Display of **4 12 02** means that " Loading Motor turns ON when [EJECT] button was pressed, but an error has occurred while mechanism was between REV position and LOAD position.

<Supplementary Data 3>

[EJECT]	[FF]	[REW]
10: PLAY → passing REV 11: passing REV 12: passing REV → LOAD (Capstan STOP) 13: LOAD → DOWN 14: DOWN → EJECT 15: EJECT completion	U0: PLAY → STOP F U1: STOP F → FF U2: FF starting up	A0: PLAY → STOP F A1: STOP → REW A2: REW starting up
[PLAY]	[REC]	[STILL]
20: Cylinder starting up, Phase drawing	30: Cylinder starting up, Phase drawing	40:Turning forward
21: Audio muting, VV selection	31: REC signal output	41:Speed is 0, Capstan is OFF
[P.ON]	[STILL → PLAY]	[CUE]
-- Process of turning on power	48: Tape sending	49: x2 speed sending, Turning point of Calculating remains
[P.OFF]	[CUE → PLAY]	[REV]
70: PLAY → P.OFF	4A: Finishing edge Checking, Tape sending	80: PLAY → P.OFF
	4-: PLAY Checking, Tape sending	81: Rewinding
		P.OFF → REV

<Supplementary Data 4> (LM Information)

Result of request of driving Loading Motor.

Display	Description
1	There was no change of mechanism position. (Loading Motor was OFF)
2	There was some change of mechanism position. (Loading Motor was ON)

8.2.5. (VHS) Description of Self Diagnosis Memory

In this Self-Diagnosis Function, in case error has occurred continuously, maximum of the newest 3 error data are memorized.

And in order to analyze cause of error, the error number and the supplementary data of mode, mechanism position and so on are memorized.

8.2.5.1. (VHS) Error Number and Supplementary Data

The Supplementary Data as shown below are memorized to each error number.

Error No.	Reason	Supplementary Data			
		Data 1	Data 2	Data 3	Data 4
01	The cylinder could not be started. (Error of the cylinder or the cylinder driver.)	VHS mode	-	-	-
02	The CAP FG could not be detected.	VHS mode	-	Process No.	Number of FG
03	Mechanism lock during without the unloading and the cassette-up.	VHS mode	Standby position	Process No.	LM information
04	Mechanism lock during unloading	VHS mode	-	Process No.	LM information
05	S-reel pulse cannot be detected when a cassette tape is inserted. (Error of the S-reel system or the Capstan system.)	VHS mode	Tape position	Process No.	LM information
06	Mechanism lock during the Cassette-up.	VHS mode	Standby position	Process No.	LM information
07	The recording circuit can not be operated in REC mode.	VHS mode	-	Process No.	-
08	The recording circuit is operated in except for REC mode.	VHS mode	-	Process No.	-
09	Serial communication Error between VHS Microprocessor (IC6001) and Timer Microprocessor (IC7501).	-	-	-	-
11	Cylinder clogs during the PLAY mode.	VHS mode	-	Process No.	-
15	S-reel pulse cannot be detected when a cassette tape is inserted. (Error of the S-reel system or the Capstan system.)	VHS mode	Value of S-Reel Pulse counted	Process No.	-
16	Detection of the Cylinder lock during the constant rotation	VHS mode	Tape position	Process No.	-
17	Detection of S-reel lock during the constant tape running	VHS mode	Tape position	Process No.	Number of FG
18	Detection of T-reel lock during the constant tape running	VHS mode	Tape position	Process No.	Number of FG
20	NG1 in the PG Shifter Automatic Adjustment (The cylinder rotation is unstable during the automatic adjustment.)	VHS mode	-	Process No.	-
21	NG2 in the PG Shifter Automatic Adjustment (The vertical sync signal is lacked while over 5 seconds on the alignment tape.)	VHS mode	-	Process No.	-
22	NG3 in the PG Shifter Automatic Adjustment (The installing position of Heads to the cylinder is our of specification.)	VHS mode	-	Process No.	-
23	NG4 in the PG Shifter Automatic Adjustment (The servo is not locked to the cylinder for more than 10 sec.)	VHS mode	-	Process No.	-
80	An exceptional ejection depends on a Error	VHS mode	Refer to *Note 3	Process No.	-

Note 1: Details of "VHS mode" of the Supplementary Data 1 (These values are hexadecimal indication)

0: STOP, 1: EJECT, 2: REW, 3: FF, 4:REV, 5: CUE, 6: SLOW, 7: POWEROFF, 8: PLAY, 9: STIL,

A: REC, B: REC PAUSE, C: ADUB, D: ADUB PAUSE, E: INSERT, F: INSERT PAUSE

Note 2: Explanation of "Tape position" of the Supplementary Data

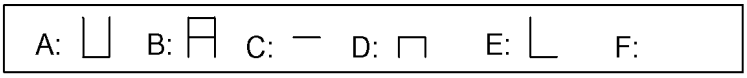
The Tape position Data is the area data of S-reel that is used for judgment of reducing speed in the Main microprocessor IC6001, and as the tape position is moved from the starting edge to the finishing edge, the value becomes smaller.

The Tape Data does not become "0" even if the tape reaches the finishing edge as the hub remains, and the tape position values are different between the large hub and the small hub as the each diameters are different from each other.

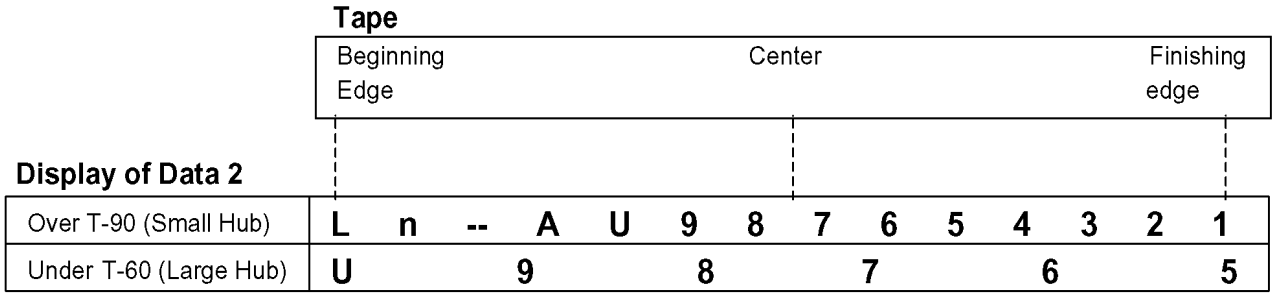
Tape Type	The aim of Tape position between the starting edge and the finishing edge
60 min. or less type (Large Hub)	The Tape position is divided into 6 stages between the Tape beginning edge: "A " and the Tape end edge: "5".
90 min. or over type (Small Hub)	The Tape position is divided into 14 stages between the Tape beginning edge: "E " and the Tape end edge: "1".

l "A" and "E" is hexadecimal. "A" =10 (Decimal), "E" =14 (Decimal).

l Hexadecimal indication from "A" to "E" are shown below.



Tape position and Display



Note 3: Supplementary Data 2 (Reason of Ejection)

Supplementary Data 2	Reason
1	S-reel pulse is less than 3 when the loading has been completed. (Miss catching the tape)
2	Pulse Timer over during the short rewind at the DOWN position. (Error of S-photo sensor system, S-reel system, Capstan system)
3	Mechanism lock from the DOWN position to the LOAD position during the loading.
4	Both ends have been detected at the LOAD position when the loading is started.

9 Service Fixture & Tools

(For DVD)

Part Number	Description	Pcs	Compatibility
RFKZ0125	Extension FFC (Power & Digital I/F P.C.B. - DVD-RAM Drive / 40 Pin)	1	Same as DMR-E50 / E55 / ES10 / ES30V series
RFKZ0168	Extension Cable (Power & Digital I/F P.C.B. - FAN / 3 Pin)	1	Same as DMR-E50 / ES30V series
RFKZ0126	Extension Cable (RAM Drive - Power & Digital I/F P.C.B. / 4 Pin)	1	Same as DMR-E30 / ES10 / ES30V series
RFKZ0327	Extension Cable (Main P.C.B. - Power & Digital I/F P.C.B. / 15 pin / 40 mm)	1	New
RFKZ0240	Extension Cable (Main P.C.B. - Power & Digital I/F P.C.B. / 19 pin / 40 mm)	2	Same as DMR-E75V / ES30V series
	Extension Cable (Main P.C.B. - Power & Digital I/F P.C.B. / 19 pin / 40 mm)		
RFKZ0260	Extension Cable (Power & Digital I/F P.C.B. - Digital P.C.B. / 88 Pin)	1	Same as DMR-ES10 / EH50/ ES30V series
RFKZ0215	Extension Cable (MainP.C.B. - Front (Jack) P.C.B. / 12 Pin)	1	Same as DMR-E55 / ES30V series
RFKZ0238	Extension Cable (Main P.C.B. - Front P.C.B. / 8 Pin)	1	Same as DMR-E75V / ES30V series

(For VHS)

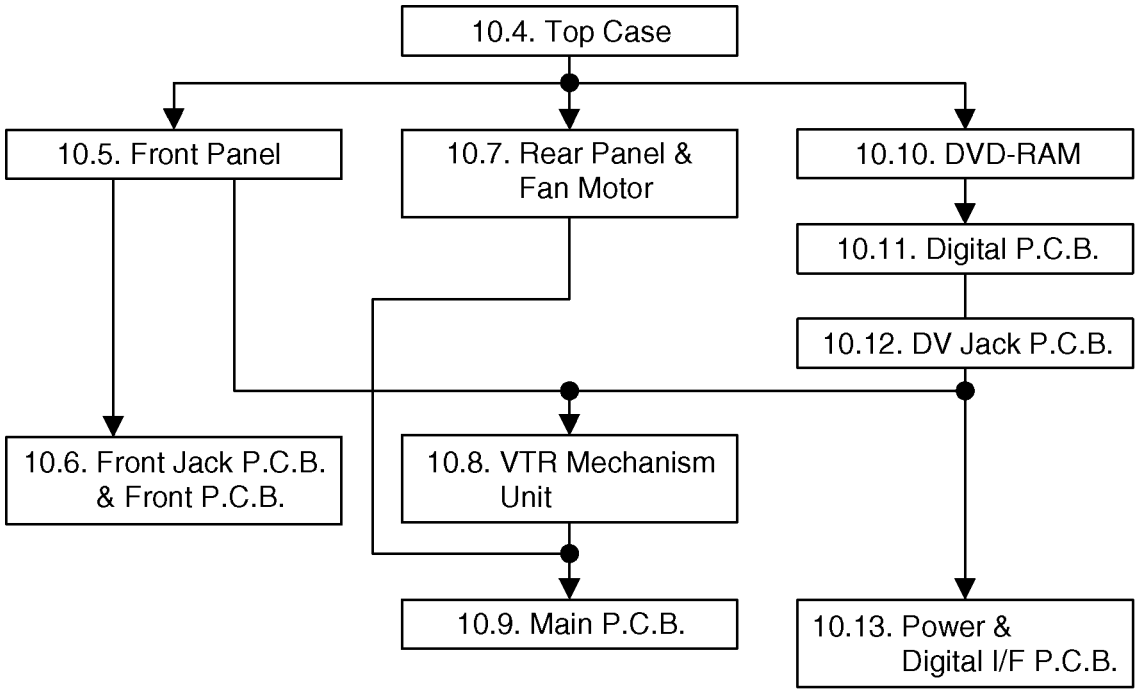
Part Number	Description	Pcs	Compatibility
VFM8080HQFP	NTSC VHS Alignment Tape	1	Same as E75V / ES30V
VFK0329	Post Adjustment Screwdriver	1	Same as E75V / ES30V
VFK0330	Fine Adjustment Gear Driver	1	Same as E75V / ES30V

10 Disassembly and Assembly Instructions

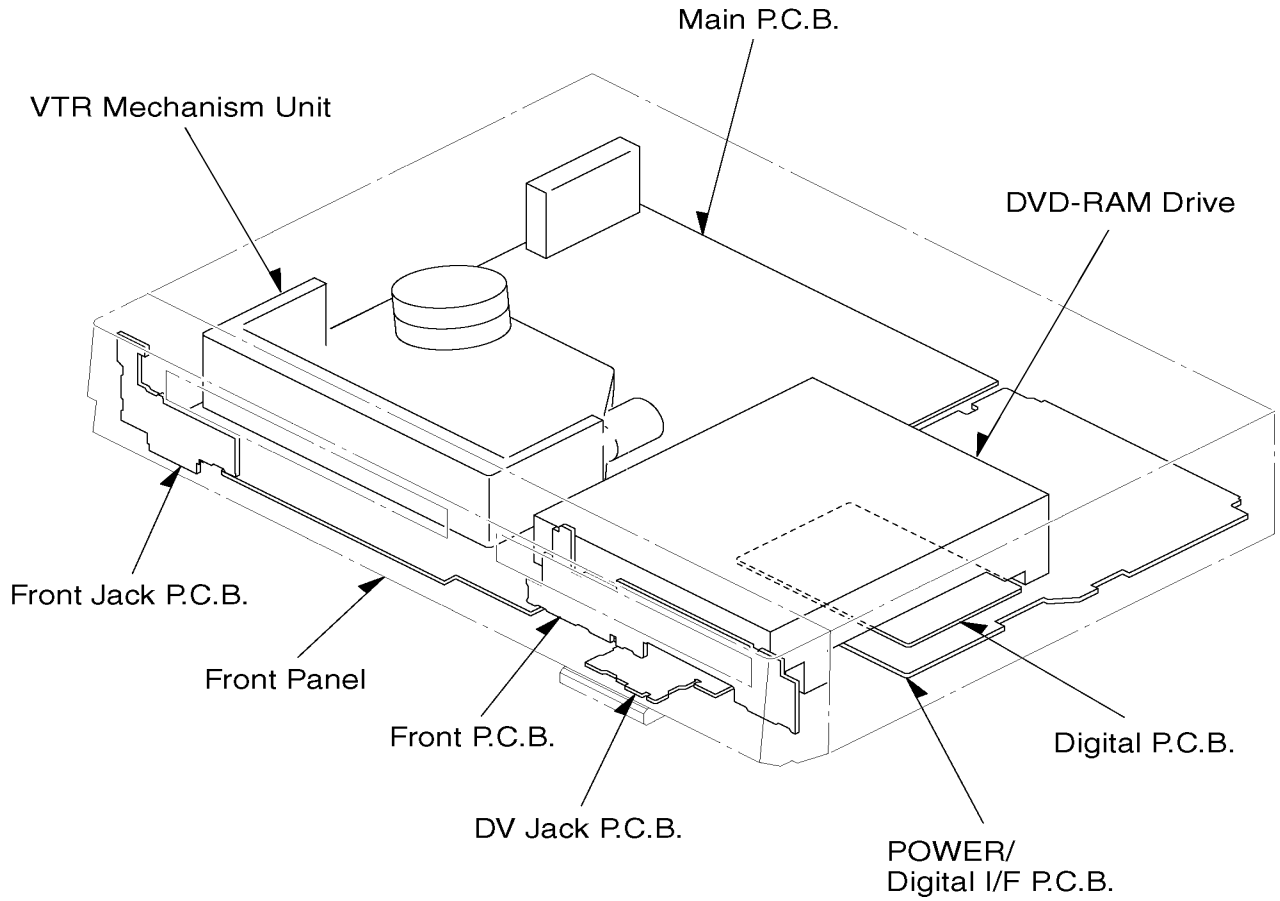
10.1. Disassembly Flow Chart

The following chart is the procedure for disassembling the casing and inside parts for internal inspection when carrying out the servicing.

To assemble the unit, reverse the steps shown in the chart below.



10.2. P.C.B. Positions



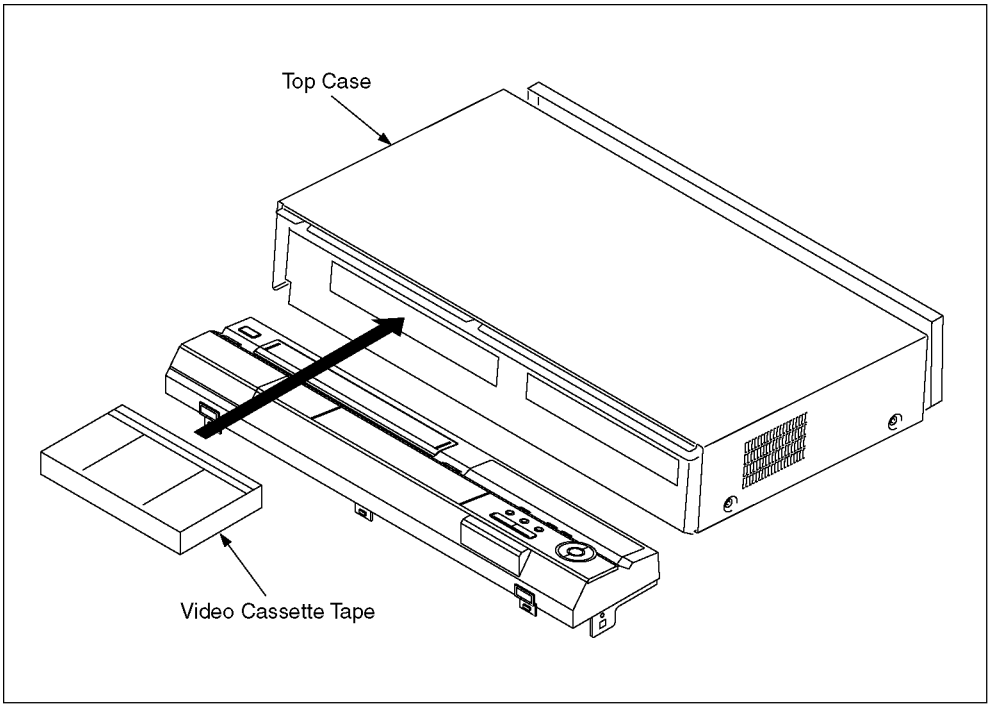
10.3. Caution with inserting cassette tape when disassembling the unit

Note1:

For description of the disassembling procedure, see the section 11.4.

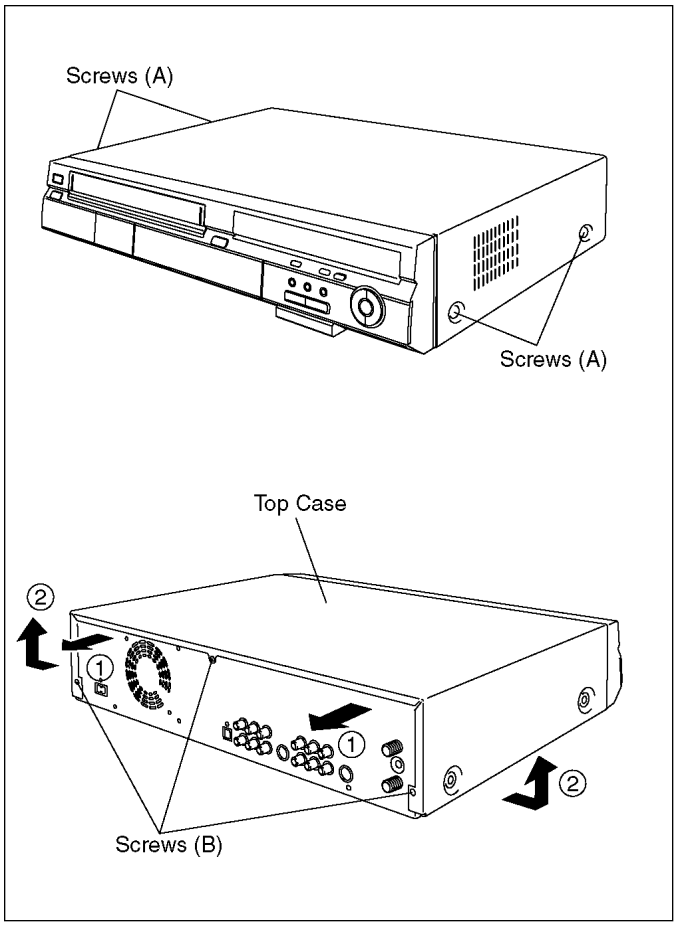
Note2:

Video Cassette might not enter when a strong lighting is applied to VHS Mechanism when Video Cassette is inserted. Please weaken the lighting or cover with the top panel etc.



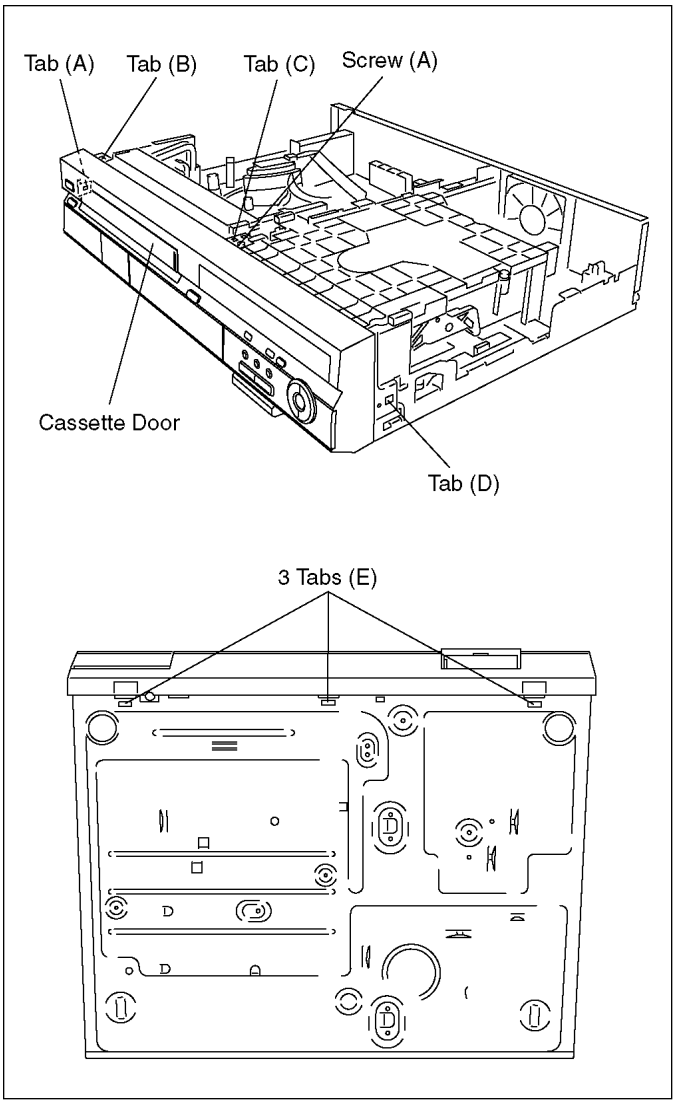
10.4. Top Case

1. Remove the 4 screws (A) and 3 screws (B).
2. Slide Top Case rearward and open the both ends at rear side of the Top Case a little and lift the Top Case in the direction of the arrows.



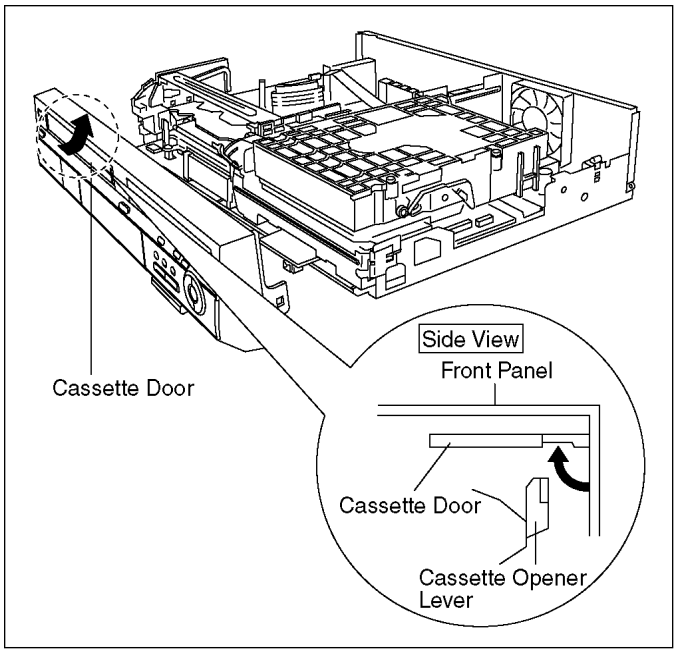
10.5. Front Panel

1. Remove one screw (A).
2. Unlock tab (A) and tab (B) simultaneously.
3. Unlock tab (C) and tab (D) simultaneously.
4. Unlock 3 tabs (E) respectively, and pull out Front Panel with connector slightly.



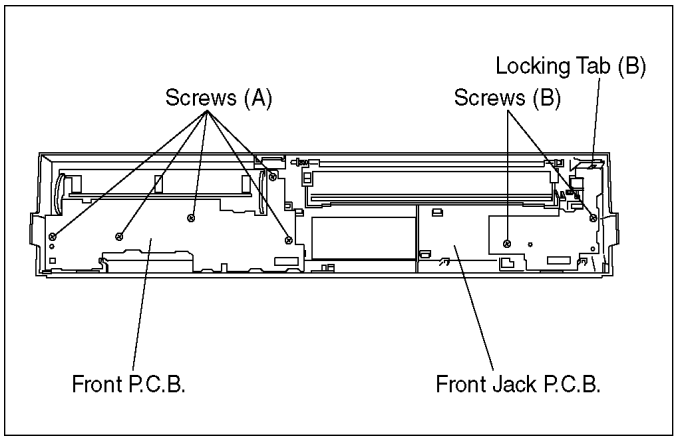
Note:

When attaching Front Panel, in order to hook Cassette Door Opener Lever to Cassette Door, push up cassette door in the direction of arrow and insert a front panel.



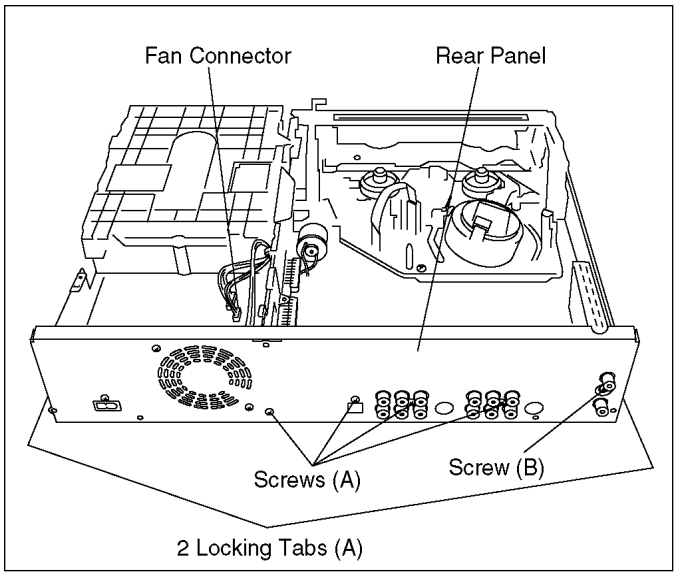
10.6. Front Jack P.C.B. & Front P.C.B.

1. Remove 5 screws (A) to remove Front P.C.B.
2. Remove 2 screws (B), and unlock 1 Locking Tabs (B) to remove Front Jack P.C.B.



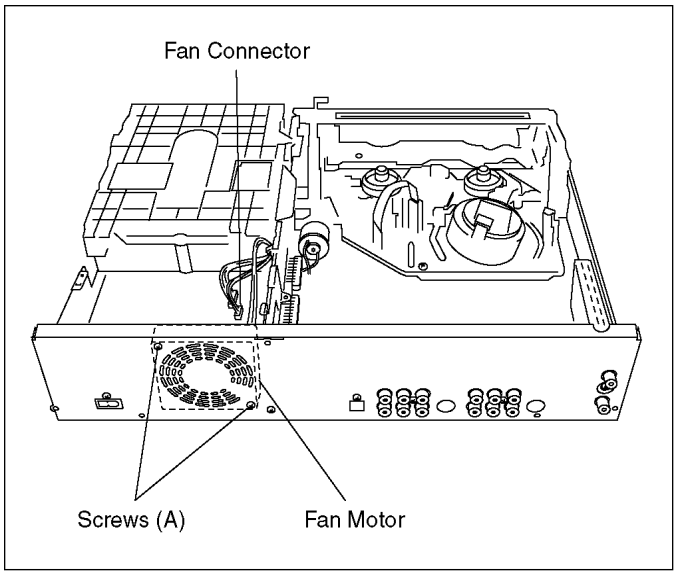
10.7. Rear Panel with Fan Motor

1. Disconnect Fan Connector.
2. Remove 5 Screws (A) and 1 Screw (B).
3. Unlock 2 Locking Tabs (A) to remove Rear Panel with Fan Motor.



10.7.1. Only Fan Motor

1. Disconnect Fan Connector.
2. Remove 2 Screws (A) to Remove Fan Motor.

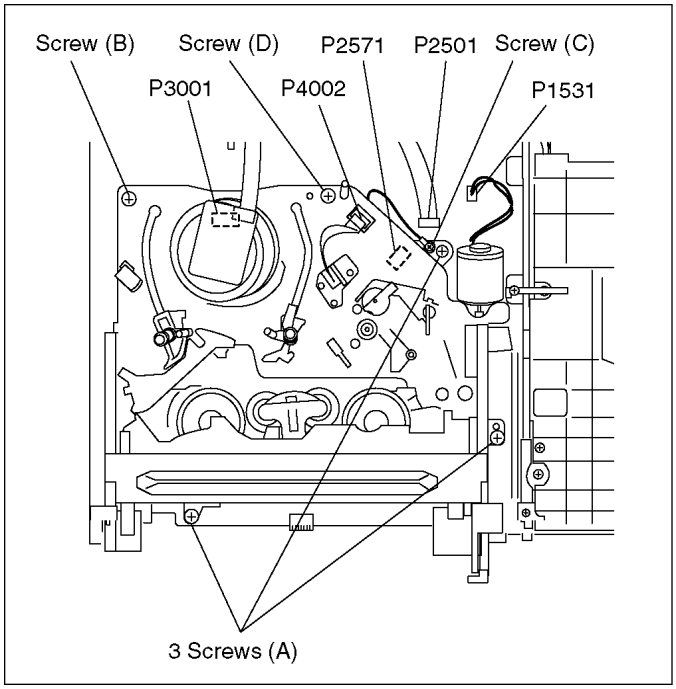


10.8. VTR Mechanism Unit

1. Disconnect 3 Connectors (P1531, P2501 and P4002).
2. Remove 3 Black Screws (A), Screw (B) , Screw (C) and Screw (D).
3. Lift up VTR Mechanism Unit perpendicularly so to disconnect Connectors (P2571 and P3001).

Note:

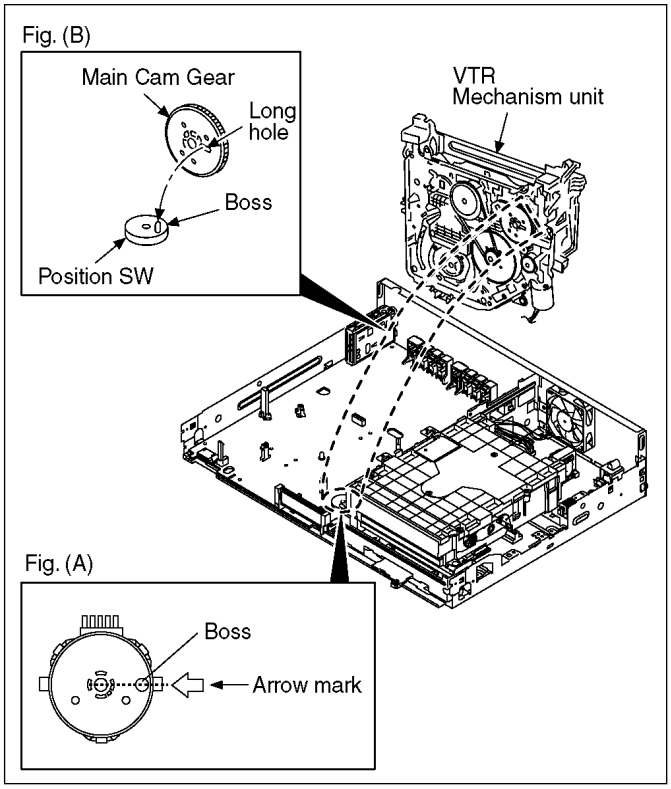
Pay attention to stiff connections of P2571 and P3001, when removing VTR Mechanism Unit.



10.8.1. Caution for attaching VTR Mechanism Unit

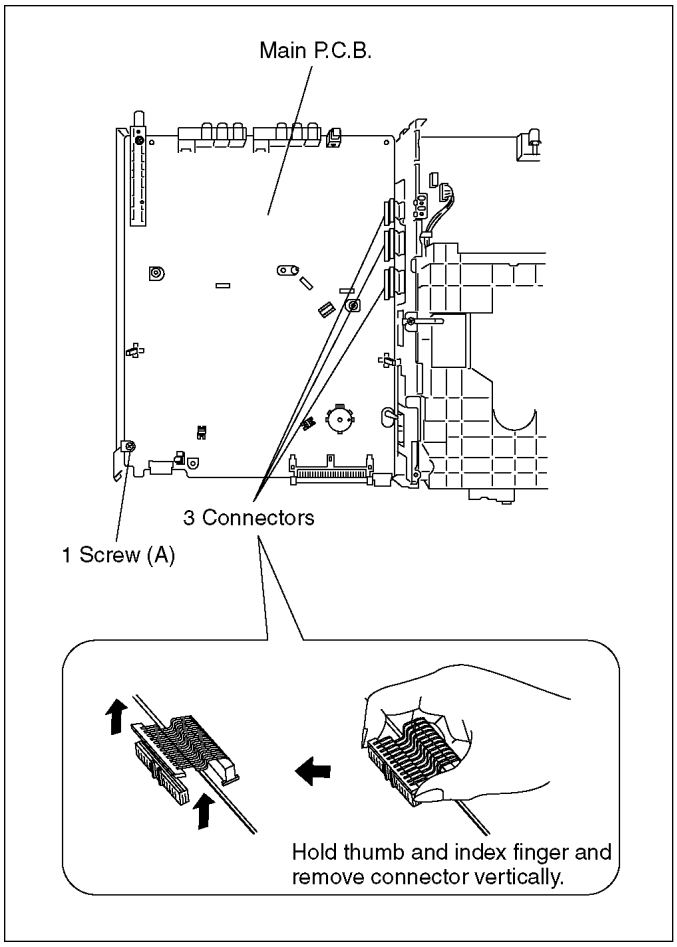
1. Because Position SW should be set to "Eject Position", refer to fig.(A) and set the position switch so that the boss and arrow mark come on a straight line.

1.Attach VTR Mechanism Unit so that Boss of Position SW is put into long hole of Main Cam Gear, refer to Fig. (B).



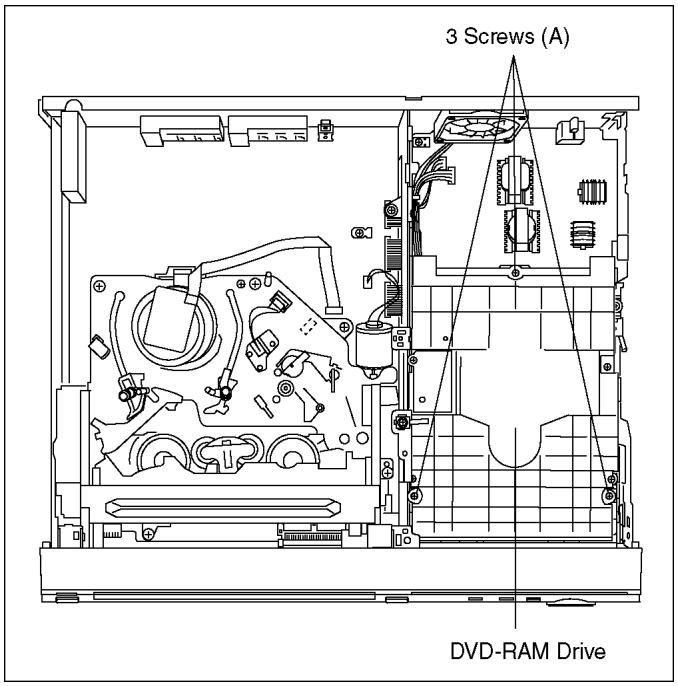
10.9. Main P.C.B.

1. Disconnect 3 Connectors.
2. Remove 1 Screw (A) and remove Main P.C.B.

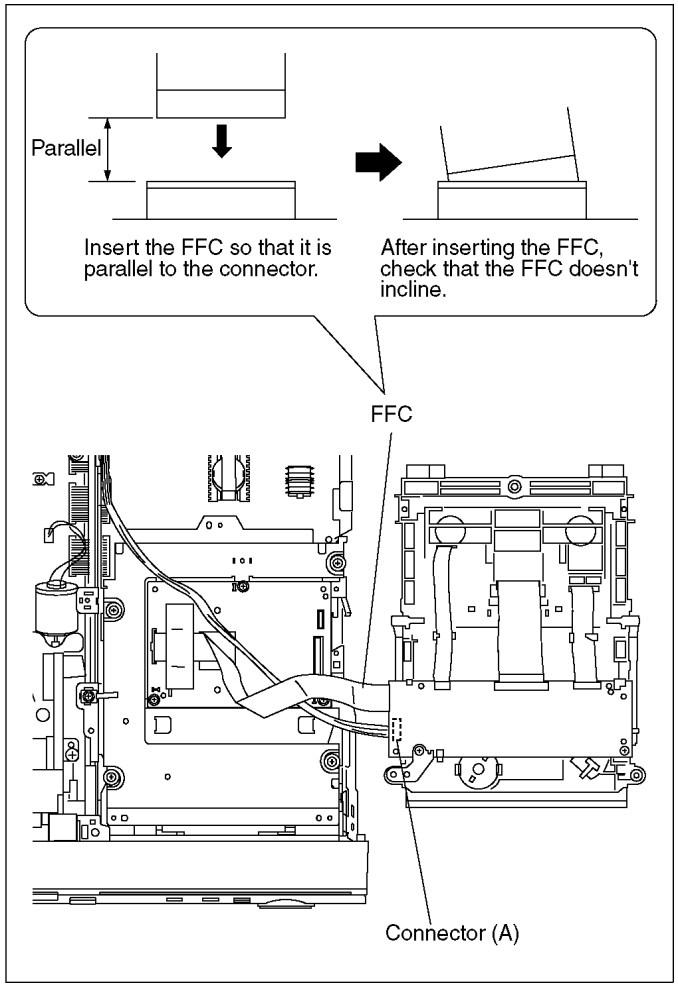


10.10. DVD-RAM Drive

1. Remove 3 Screws (A).
2. Lift up DVD-RAM Drive slightly.



3. Disconnect Connector (A) and FFC from DVD-RAM Drive.

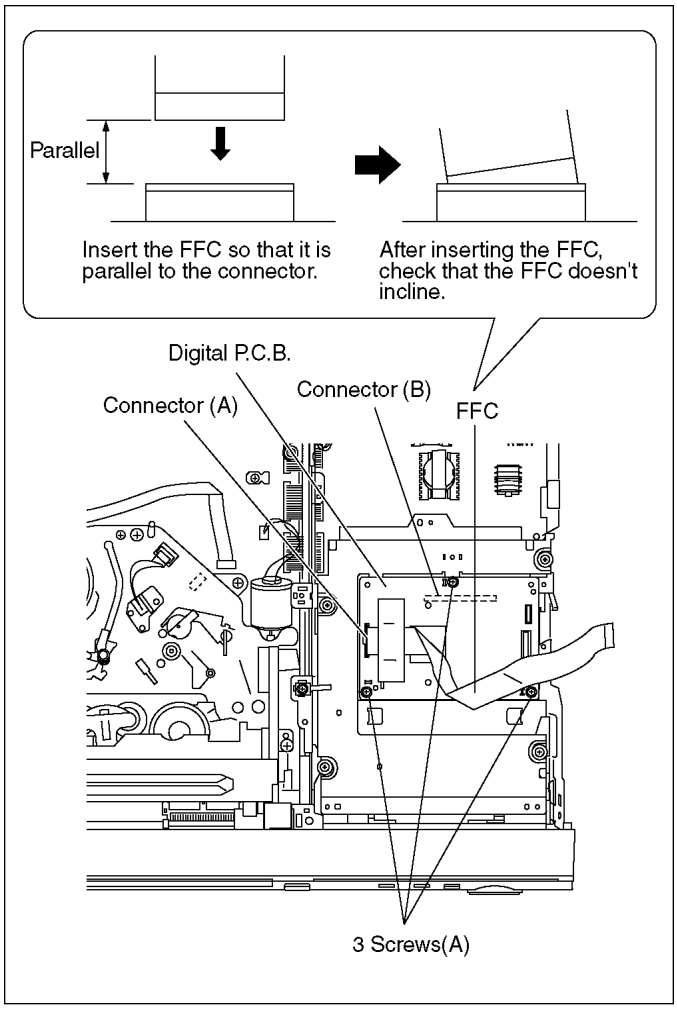


10.11. Digital P.C.B.

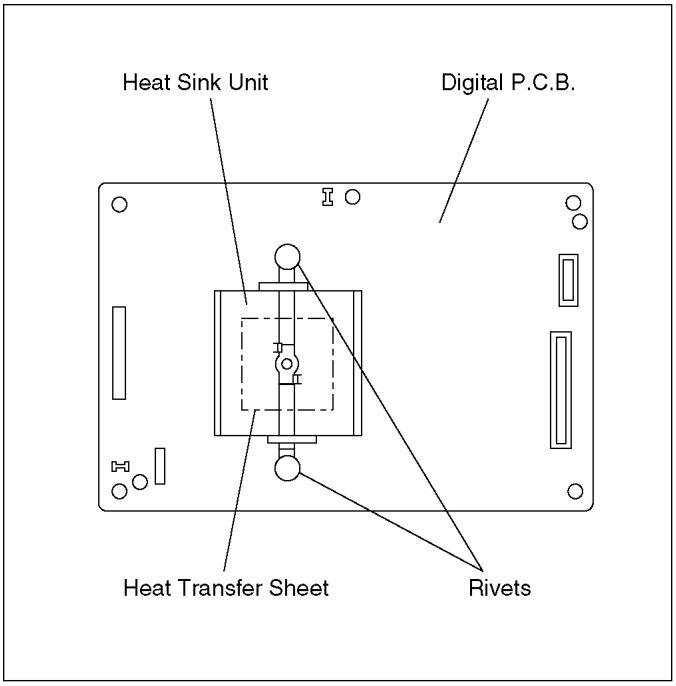
1. Remove 3 Screws (A).
2. Disconnect connector (A) and FFC from Digital P.C.B..
3. Lift up Digital P.C.B. slightly so to disconnect connector (B) to remove Digital P.C.B..

CAUTION:

When replacing Digital P.C.B., pay attention to inserting FFC.

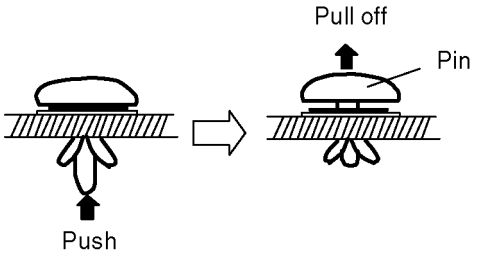


10.11.1. Removing and attaching Heat Sink Unit for IC5001



(Removing)

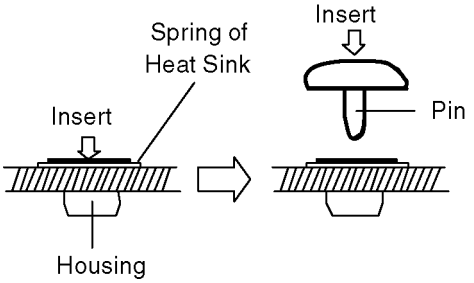
1. Push Rivets by finger as shown below.
2. Pull off Pin of Rivets.



3. Remove Heat Sink Unit.
4. Remove Heat Transfer Sheet.

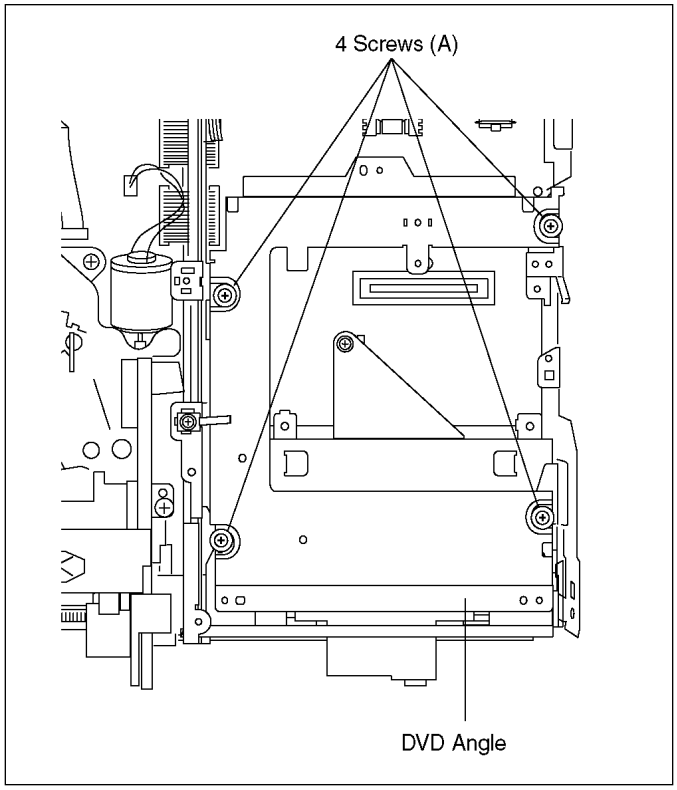
(Attaching)

1. Paste Heat Transfer Sheet on to IC5001.
2. Put Heat Sink Unit on to Heat Transfer Sheet.
3. Insert Housing of rivets through Spring of Heat sink Unit as shown below.
4. Insert Pin of Rivets.

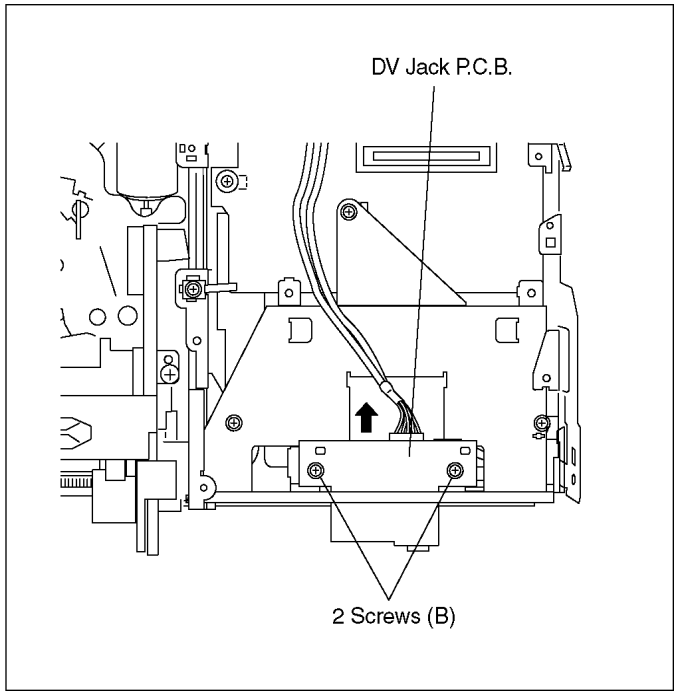


10.12. DV Jack P.C.B.

1. Remove 4 Screws (A) and DVD Angle.



2. Remove 2 Screws (B).
3. Pull out the DV Jack P.C.B. in the direction of the arrow.



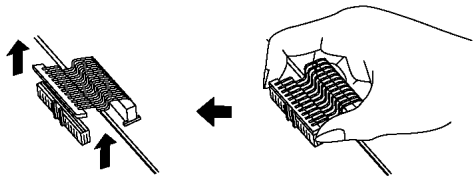
10.13. Power & Digital I/F P.C.B.

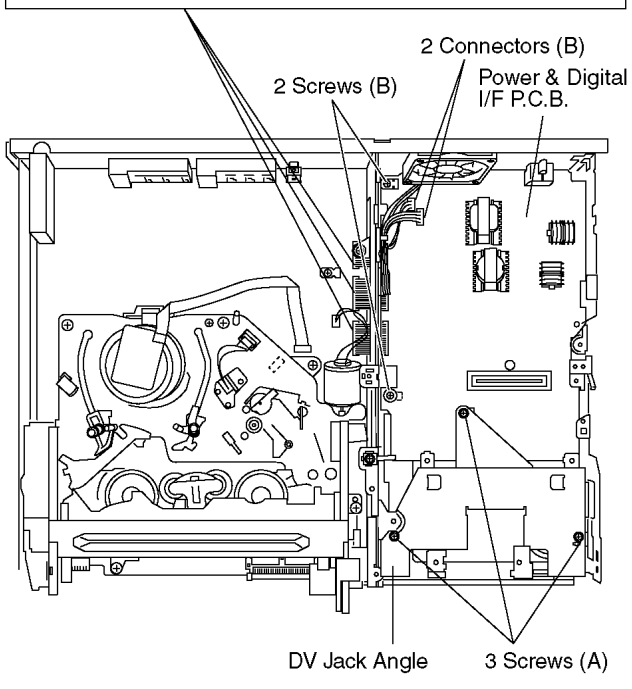
Note:
If connection of 3 Conenectors (A) are tight, remove connectors after removing VTR Mechanism (refer to 11.8.) once.

1. Remove 3 Screws (A) and DV Jack Angle.
2. Remove Fan Motor (refer to 11.7.1.).
3. Disconnect 3 Connectors (A) and 2 Connectors (B).
4. Remove 2 screws (B).
5. Remove Power and Digital I/F P.C.B.

3 Connectors (A)

Note:
If connection of 3 Connectors (A) are tigh, remove connectors after removing VTR Mechanism (refer to 11.8.) once.





11 Measurements and Adjustments

11.1. Service Positions

Note:
For description of the disassembling procedure, see the section 10.

11.1.1. Checking and Repairing of Power & Digital I/F P.C.B.

1. Top Case
- Remove 4 Screws (A) on side
- Remove 3 Screws (B) on rear
- Remove Top Case

2. Front Panel
- Remove 1 Screw (A) on center.
- Unlock 4 Locking Tabs (A),(B),(C),(D)
- Unlock 3 Locking Tabs (E) on bottom to remove Front Panel

3. Rear Panel with Fan Motor
- Disconnect Fan Connector
- Remove 4 Screws (A) and 1 Screw (B) fixing Rear Panel
- Unlock 2 Locking Tabs to remove Rear Panel with Fan Motor

4. DVD-RAM Drive
- Remove 3 Screws (A) fixing DVD-RAM Drive
- Lift up DVD-RAM Drive slightly
- Remove Cable between DVD-RAM Drive and Power & Digital I/F P.C.B.
- Remove FFC between DVD-RAM Drive and Digital P.C.B.
- Remove DVD-RAM Drive and put it beside chassis

5. Digital P.C.B.
- Remove 3 Screws (A) fixing Digital P.C.B.
- Remove Cable between Digital P.C.B. and DV Jack P.C.B.
- Disconnect FFC from Digital P.C.B.
- Remove Digital P.C.B.

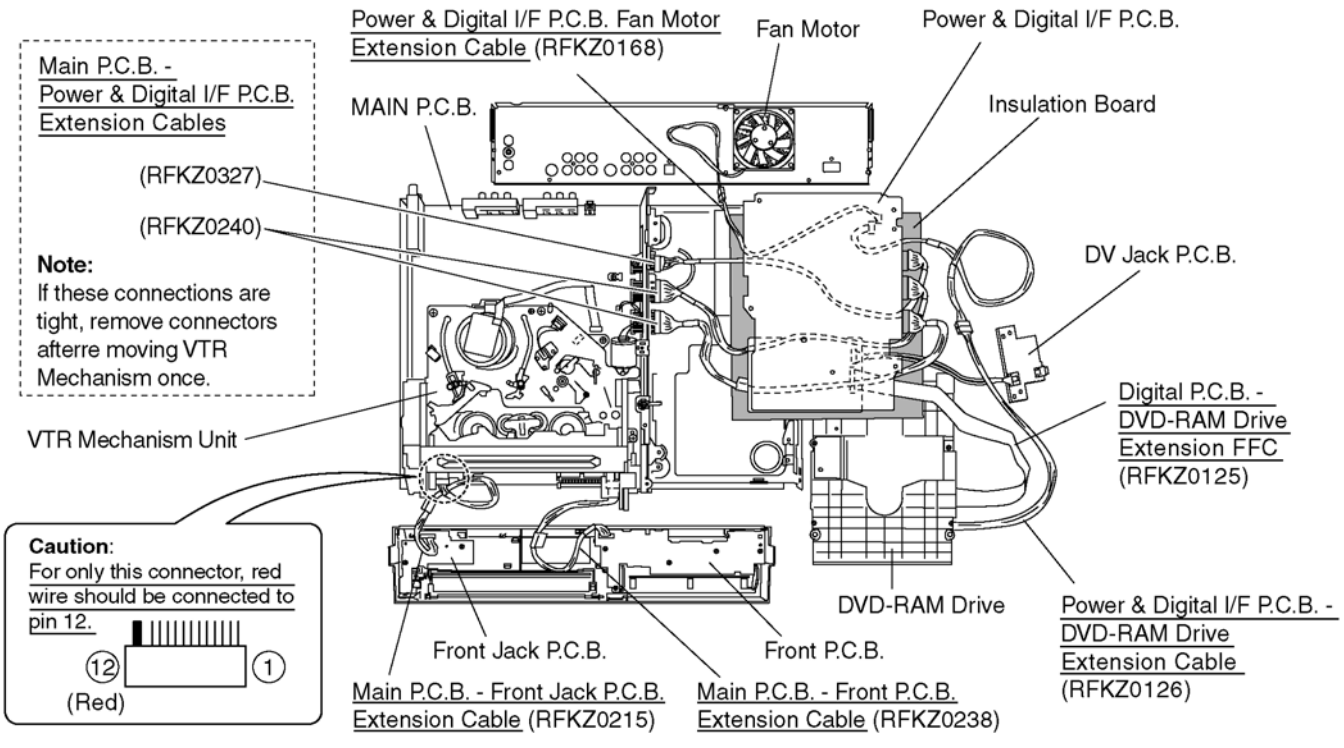
6. DV Jack P.C.B.
- Remove 4 Screws (A) and DVD Angle
- Remove 2 Screws (B)
- Remove DV Jack P.C.B.

7. Power & Digital I/F P.C.B.
- Remove 3 Screws (A) and DV Jack Angle
- Remove 3 Connectors between Main P.C.B. and Power & Digital I/F P.C.B.
- Remove Fan Connector from Power & Digital I/F P.C.B.
- Remove 2 Screws from Power & Digital I/F P.C.B.
- Remove Power & Digital I/F P.C.B.

Put an insulated sheet on RAM Drive, and place the Power & Digital I/F P.C.B. on insulation Board so that the foil side faces up

Connect Extension Cables,
*betweenMain P.C.B. and Power & Digital I/F P.C.B. with (RFKZ0327/ RFKZ0240 x 2),
*between Main P.C.B. and Front Jack P.C.B. with (RFKZ0215),
*between Main P.C.B. and Front P.C.B. with (RFKZ0238),
*between Power & Digital I/F P.C.B. and DVD-RAM Drive with (RFKZ0126),
*between Power & Digital I/F P.C.B. and Fan Motor with (RFKZ0168),
*between Digital P.C.B. and DVD-RAM Drive with (RFKZ0125).

Caution :
Red wire in the extension cable should be connected to (1) pin.



11.1.2. Checking and Repairing of Main P.C.B.

1. Top Case
- Remove 4 Screws (A) on side.
- Remove 3 Screws (B) on rear.
- Remove Top Case.

2. Front Panel
- Remove one Screw (A) on center.
- Unlock 4 Locking Tabs (A),(B),(C),(D)
- Unlock 3 Locking Tabs (E) on bottom
- Remove Front Panel

3. Rear Panel with Fan Motor
- Disconnect Fan Connector
- Remove 4 Screws (A) and 1 Screw (B) fixing Rear Panel
- Unlock 2 Locking Tabs to remove Rear Panel with Fan Motor

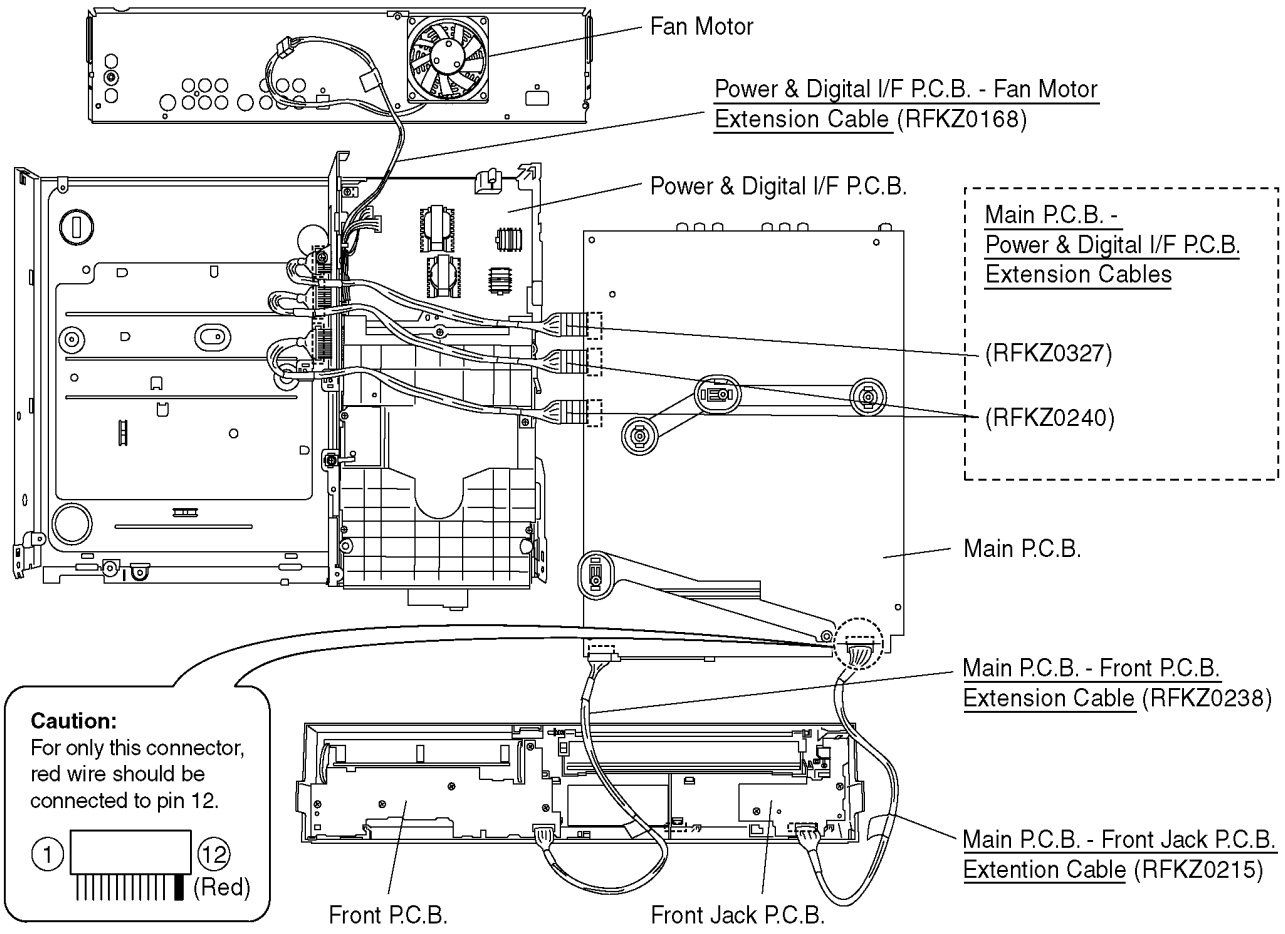
4. VTR Mechanism Unit
- Disconnect 3 Connectors
- Remove 3 Black Screws (A)
- Remove 3 Screws (B), (C) and (D)
- Lift up VTR Mech. Unit to remove it

5. Main P.C.B.
- Disconnect 3 Connectors from Power & Digital I/F P.C.B.
- Remove 1 Screw (A) fixing Main P.C.B. to remove Main P.C.B.
- Attach VTR Mechanism Unit on to Main P.C.B.
- Tighten Screw (C) with Earth Wire
- Tighten Screw (D) beside Screw (C)
- Insert 1 Connector and 2 FFCs

Hold Main P.C.B.with VTR Mechanism, make it upside-down, and put it.

Connect Extension Cables,
*between Main P.C.B. and Power & Digital I/F P.C.B. with (RFKZ0327/ RFKZ0240 x 2),
*between Main P.C.B. and Front Jack P.C.B. with (RFKZ0215),
*between Main P.C.B. and Front P.C.B. with (RFKZ0238).

Caution : Red wire in the extension cable should be connected to (1) pin.



11.1.3. Checking and Repairing of Digital P.C.B.

1. Top Case

- Remove 4 Screws (A) on side
- Remove 3 Screws (B) on rear
- Remove Top Case

2. DVD-RAM Drive

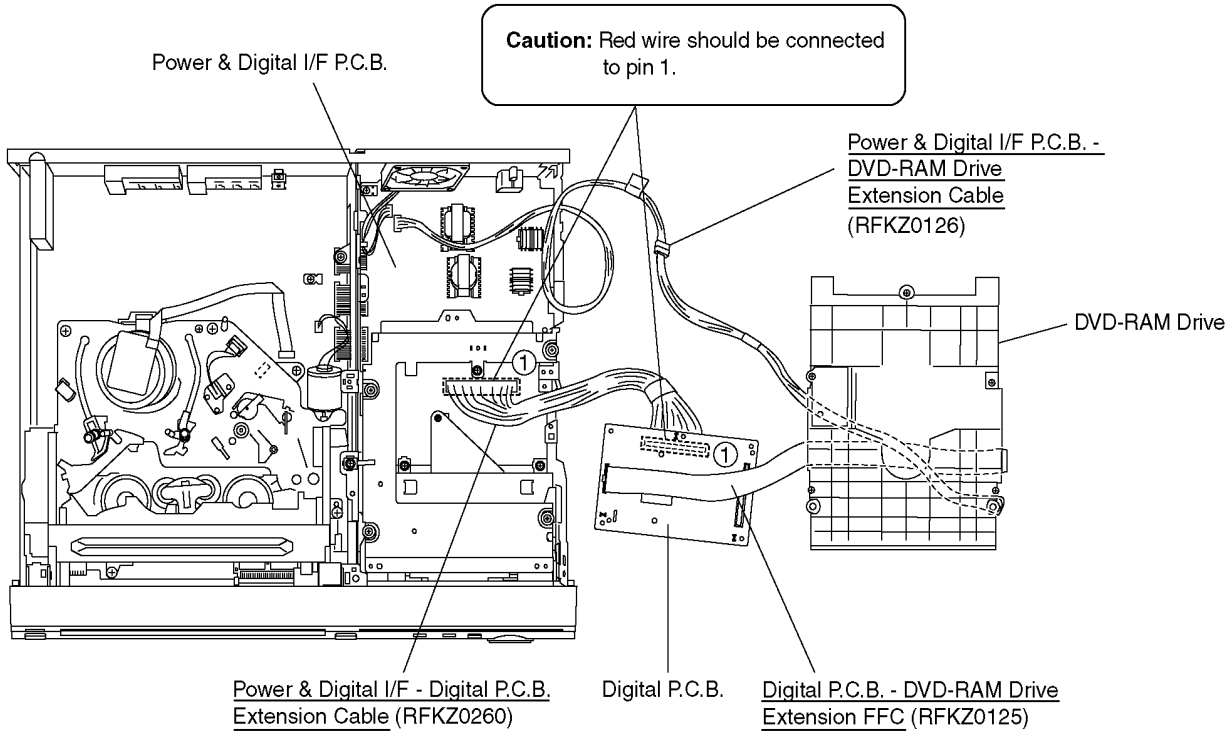
- Remove 3 Screws (A) fixing DVD-RAM Drive
- Lift up DVD-RAM Drive slightly
- Remove Cable between DVD-RAM Drive and Power & Digital I/F P.C.B.
- Disconnect FFC from DVD-RAM Drive
- Remove DVD-RAM Drive and put it beside chassis.

3. Digital P.C.B.

- Remove 3 Screws (A) fixing Digital P.C.B.
- Remove Cable between Digital P.C.B. and DV Jack P.C.B.
- Disconnect FFC from Digital P.C.B.
- Remove Digital P.C.B.

Connect Extension Cables,
*between Power & Digital I/F P.C.B. and Digital P.C.B. with (RFKZ0260),
*between Power & Digital I/F P.C.B. and DVD-RAM Drive with (RFKZ0126),
*between Digital P.C.B. and DVD-RAM Drive with (RFKZ0125).

Caution : Red wire in the extension cable should be connected to (1) pin.



11.1.4. Checking and DVD-RAM Drive

1. Top Case

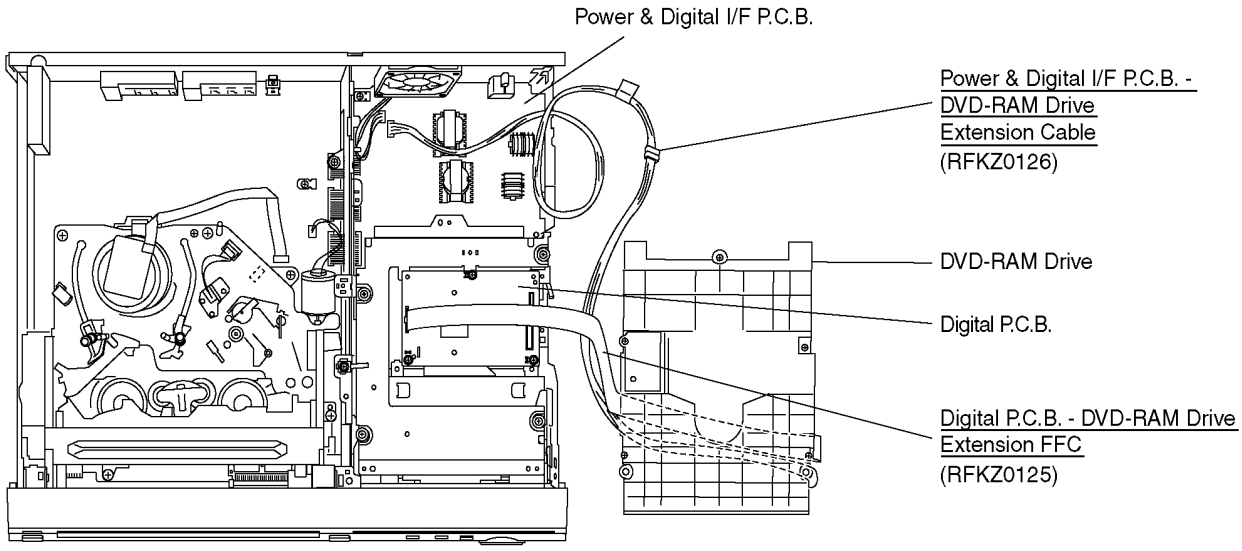
- Remove 4 Screws (A) on side.
- Remove 3 Screws (B) on rear.
- Remove Top Case.

2. DVD-RAM Drive

- Remove 3 Screws (A) fixing DVD-RAM Drive
- Lift up DVD-RAM Drive slightly
- Remove Cable between DVD-RAM Drive and Power & Digital I/F P.C.B.
- Remove FFC between DVD-RAM Drive and Digital P.C.B.
- Remove DVD-RAM Drive and put it beside chassis

Connect Extension Cables,
*between Power & Digital I/F P.C.B. and DVD-RAM Drive with (RFKZ0126),
*between Digital P.C.B. and DVD-RAM Drive with (RFKZ0125)

Caution : Red wire in the extension cable should be connected to (1) pin.



11.2. (DVD) Caution after parts replacing parts

11.2.1. (DVD) After replacing the RAM Drive with new one

After replacing RAM drive unit, TEST mode is not necessary. Please confirm operation for RAM drive

11.2.2. (DVD) When the unit does not operate normally after replacing the Timer Microprocessor or Main P.C.B.

When the unit does not operate normally after replacing the Timer Microprocessor or Main P.C.B. with new one, reset Timer Microprocessor.

Step	Operation	Descriptions
1	While power is OFF, short TW7501 (BACK-UP) and the GND momentarily.	Memory will be initialized then the unit operates normally.

11.3. (VHS) Caution after replacing parts

PG Shifter Automatic Adjustment and X-VALUE & LINEARITY (P2 and P3 Posts) ADJUSTMENT should be performed after replacing DD Cylinder, Timer Microprocessor or Main P.C.B.

Note:

The “X-VALUE & LINEARITY (P2 and P3 Posts) ADJUSTMENT” is not necessary after only replacement of Timer Microprocessor or Main P.C.B.

11.3.1. (VHS) Adjustment Procedures after replacing DD Cylinder, Timer Microprocessor or Main P.C.B.

ADJUSTMENT PROCEDURE

PROCEDURE	F.I.P. DISPLAY
Turn on the Service Mode 1.Press the FF key and the EJECT key simultaneously for more than 3 seconds.	00000
Activate the Service Mode 2 2. While keep pressing FF key, press the EJECT key twice.	20000
Activate the Entering Mode. 3. Press the EJECT key for more than 3 seconds.	2 00
Set the Mode 2. 4. Press the CH UP key once.	2 100
Insert the alignment cassette tape (VFM8080HQFP) 5. The PG Shifter Adjustment starts automatically.	2 100
When the sequence of the automatic adjustment has been terminated, the following action has been made. **I SUCCEED: The cassette tape is ejected.** **I ERROR: The "F20", "F21", "F22" or "F23" is displayed. Refer to next PG Shifter Adjustment Self-Diagnosis Indication Table regarding the details of the indications.**	
Exit from Service Mode. 6. Press FF and EJECT keys simultaneously in 6 times. Then the FIP becomes normal indication.	10:00 (Normal Indication)

PG SHIFTER AUTOMATIC ADJUSTMENT SELF-DIAGNOSIS INDICATION

F20	NG1 in the PG Shifter Automatic Adjustment (The cylinder rotation is unstable during the automatic adjustment.)
F21	NG2 in the PG Shifter Automatic Adjustment (The vertical sync signal is lacked while over 5 seconds on the alignment tape.)
F22	NG3 in the PG Shifter Automatic Adjustment (The installing position of Heads to the cylinder is our of specification.
F23	NG4 in the PG Shifter Automatic Adjustment (The servo is not locked to the cylinder for more than 10 sec.)

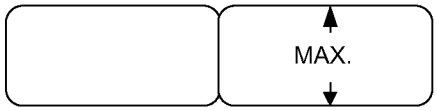
NOTE:

When DD Cylinder was replaced, the Tape Interchangeability adjustment (X-Value Adjustment, P2 and P3 Posts Adjustment) shown below should be performed after the PG Shifter Automatic Adjustment.

11.3.2. (VHS) X-VALUE & LINEARITY (P2 and P3 Posts) ADJUSTMENT

1. Set the Auto Tracking to off.
   (1) Press the FF key and the EJECT key simultaneously for more than 3 seconds to enter Service Mode.
   (2) While keep pressing FF key, press the EJECT key twice to activate Service Mode 2, then Auto-Tracking is turned off.
2. Perform the X-VALUE ADJUSTMENT
   (1) After turning off the Auto tracking, playback the alifnment Tape and press [(VHS) CH UP] and [(VHS) CH DOWN] keys simultaneously to adjust the tracking to FIX value.
   (2) Adjust A/C Head Base so that the envelope becomes maximum level.
   (It is described on **"5.2. Tape Interchangeability Adjustment" in "R4 Mechanism"** that is separated volume.)

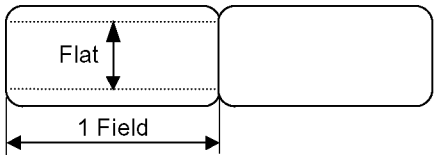
Alignment Tape	VFM8080HQFP
Test Point of Playback Envelope	TW3001 (or TW4502)



Playback Envelope

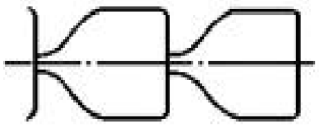
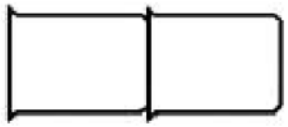
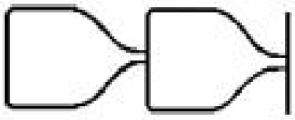
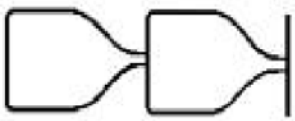
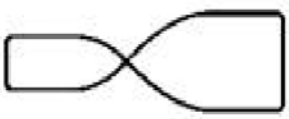
3. Perform the LINEARITY ADJUSTMENT
   (1) After turning off the Auto tracking, playback the alignment Tape and press [(VHS) CH UP] and [(VHS) CH DOWN] keys simultaneously to adjust the tracking to FIX value.
   (2) Adjust the LINEARITY so that the envelope is flat when moving tracking to (+) and (-) directions.

Alignment Tape	VFM8080HQFP
Test Point of Playback Envelope	TW3001 (or TW4502)



Playback Envelope

l Main symptoms and Adjustment point

Envelope	Post Name	Adjustment Method
	P2 Post 	Turn P2 Post counter-clockwise (Approx. 1/2 revolution)
	P2 Post 	Turn P2 Post clockwise (Approx. 1/4 revolution)
	P3 Post 	Turn P3 Post clockwise (Approx. 1/2 revolution)
	P3 Post 	Turn P3 Post counter-clockwise (Approx. 1/4 revolution)
	P2 Post  P3 Post 	Turn P2 Post clockwise (Less than 1 revolution) Turn P3 Post counter-clockwise (Less than 1revolution)

11.3.3. (VHS) Caution after replacing VHS Microprocessor (IC6001)

After replacing VHS Microprocessor (IC6001), If the unit does not operate normaly, short TL6002 and TL6004 momentarily while power is ON, then IC6001 is reset and operate normaly.

11.4. (DVD) Standard Inspection Specifications after Making Repairs

After making repairs, we recommend performing the following inspection, to check normal operation.

No.	Procedure	Item to Check
1	Turn on the power, and confirm items pointed out.	Items pointed out should reappear.
2	Insert RAM disc.	The Panasonic RAM disc should be recognized.
3	Enter the EE (TU IN / AV IN - AV OUT) mode.	No abnormality should be seen in the picture, sound or operation.
4	Perform auto recording and playback for one minute using the RAM disc.	No abnormality should be seen in the picture, sound or operation.
5	If a problem is caused by a VCD, DVD-R, DVD-Video, Audio-CD, or MP3, playback the test disc.	No abnormality should be seen in the picture, sound or operation.
6	After checking and making repairs, upgrade the firmware to the latest version.	Make sure that [FIRM_SUCCESS] appears in the FL displays. *[UNFORMAT] display means the unit is already updated to newest same version. Then version up is not necessary.
7	Transfer [9][9] in the service mode setting, and initialize the service settings (return various settings and error information to their default values. The laser time is not included in this initialization).	Make sure that [CLr S] appears in the FL display. After checking it, turn the power off.
8	When replacing of RAM drive, transfer [9] [5] in the service mode setting to delete Laser used time.	Make sure that [CLr 1] appears in the FL display. After that, turn power off.

Use the following checklist to establish the judgement criteria for the picture and sound.

Item	Contents	Check	Item	Contents	Check
Picture	Block noise		Sound	Distorted sound	
	Crosscut noise			Noise (static, background noise, etc.)	
	Dot noise			The sound level is too low.	
	Picture disruption			The sound level is too high.	
	Not bright enough			The sound level changes.	
	Too bright				
	Flickering color				
	Color fading				

12 Miscellaneous

12.1. Abbreviations

12.1.1. DVD

INITIAL/LOGO		ABBREVIATIONS
A	A0~UP	ADDRESS
	ACLK	AUDIO CLOCK
	AD0~UP	ADDRESS BUS
	ADATA	AUDIO PES PACKET DATA
	ALE	ADDRESS LATCH ENABLE
	AMUTE	AUDIO MUTE
	AREQ	AUDIO PES PACKET REQUEST
	ARF	AUDIO RF
	ASI	SERVO AMP INVERTED INPUT
	ASO	SERVO AMP OUTPUT
	ASYNC	AUDIO WORD DISTINCTION SYNC
B	BCK	BIT CLOCK (PCM)
	BCKIN	BIT CLOCK INPUT
	BDO	BLACK DROP OUT
	BLKCK	SUB CODE BLOCK CLOCK
	BOTTOM	CAP. FOR BOTTOM HOLD
	BYP	BYPATH
	BYTCK	BYTE CLOCK
C	CAV	CONSTANT ANGULAR VELOCITY
	CBDO	CAP. BLACK DROP OUT
	CD	COMPACT DISC
	CDSCK	CD SERIAL DATA CLOCK
	CDSRDATA	CD SERIAL DATA
	CDRF	CD RF (EFM) SIGNAL
	CDV	COMPACT DISC-VIDEO
	CHNDATA	CHANNEL DATA
	CKSL	SYSTEM CLOCK SELECT
	CLV	CONSTANT LINEAR VELOCITY
	COFTR	CAP. OFF TRACK
	CPA	CPU ADDRESS
	CPCS	CPU CHIP SELECT
	CPDT	CPU DATA
	CPUADR	CPU ADDRESS LATCH
	CPUADT	CPU ADDRESS DATA BUS
	CPUIRQ	CPU INTERRUPT REQUEST
	CPRD	CPU READ ENABLE
	CPWR	CPU WRITE ENABLE
	CS	CHIP SELECT
	CSYNCIN	COMPOSITE SYNC IN
	CSYNCOUT	COMPOSITE SYNC OUT
D	DACCK	D/A CONVERTER CLOCK
	DEEMP	DEEMPHASIS BIT ON/OFF
	DEMPH	DEEMPHASIS SWITCHING
	DIG0~UP	FL DIGIT OUTPUT
	DIN	DATA INPUT
	DMSRCK	DM SERIAL DATA READ CLOCK
	DMUTE	DIGITAL MUTE CONTROL
	DO	DROP OUT
	DOUT0~UP	DATA OUTPUT
	DRF	DATA SLICE RF (BIAS)
	DRPOUT	DROP OUT SIGNAL
	DREQ	DATA REQUEST
	DRESP	DATA RESPONSE
	DSC	DIGITAL SERVO CONTROLLER
	DSLF	DATA SLICE LOOP FILTER
	DVD	DIGITAL VIDEO DISC

INITIAL/LOGO		ABBREVIATIONS
E	EC	ERROR TORQUE CONTROL
	ECR	ERROR TORQUE CONTROL REFERENCE
	ENCSEL	ENCODER SELECT
	ETMCLK	EXTERNAL M CLOCK (81MHz/40.5MHz)
	ETSCLK	EXTERNAL S CLOCK (54MHz)
F	FBAL	FOCUS BALANCE
	FCLK	FRAME CLOCK
	FE	FOCUS ERROR
	FFI	FOCUS ERROR AMP INVERTED INPUT
	FEO	FOCUS ERROR AMP OUTPUT
	FG	FREQUENCY GENERATOR
	FSC	FREQUENCY SUB CARRIER
	FSCK	FS (384 OVER SAMPLING) CLOCK
G	GND	COMMON GROUNDING (EARTH)
H	HA0~UP	HOST ADDRESS
	HD0~UP	HOST DATA
	HINT	HOST INTERRUPT
	HRXW	HOST READ/WRITE
I	IECOUT	IEC958 FORMAT DATA OUTPUT
	IPFRAG	INTERPOLATION FLAG
	IREF	I (CURRENT) REFERENCE
	ISEL	INTERFACE MODE SELECT
L	LDON	LASER DIODE CONTROL
	LPC	LASER POWER CONTROL
	LRCK	L CH/R CH DISTINCTION CLOCK
M	MA0~UP	MEMORY ADDRESS
	MCK	MEMORY CLOCK
	MCKI	MEMORY CLOCK INPUT
	MCLK	MEMORY SERIAL COMMAND CLOCK
	MDATA	MEMORY SERIAL COMMAND DATA
	MDQ0~UP	MEMORY DATA INPUT/OUTPUT
	MDQM	MEMORY DATA I/O MASK
	MLD	MEMORY SERIAL COMMAND LOAD
	MPEG	MOVING PICTURE EXPERTS GROUP
O	ODC	OPTICAL DISC CONTROLLER
	OFTR	OFF TRACKING
	OSCI	OSCILLATOR INPUT
	OSCO	OSCILLATOR OUTPUT
	OSD	ON SCREEN DISPLAY
P	P1~UP	PORT
	PCD	CD TRACKING PHASE DIFFERENCE
	PCK	PLL CLOCK
	PDVD	DVD TRACKING PHASE DIFFERENCE
	PEAK	CAP. FOR PEAK HOLD
	PLLCLK	CHANNEL PLL CLOCK
	PLLOK	PLL LOCK
	PWMCTL	PWM OUTPUT CONTROL
	PWMDA	PULSE WAVE MOTOR DRIVE A
	PWMOA, B	PULSE WAVE MOTOR OUT A, B

INITIAL/LOGO		ABBREVIATIONS
R	RE	READ ENABLE
	RFENV	RF ENVELOPE
	RFO	RF PHASE DIFFERENCE OUTPUT
	RS	(CD-ROM) REGISTER SELECT
	RSEL	RF POLARITY SELECT
	RST	RESET
	RSV	RESERVE
S	SBI0, 1	SERIAL DATA INPUT
	SBO0	SERIAL DATA OUTPUT
	SBT0, 1	SERIAL CLOCK
	SCK	SERIAL DATA CLOCK
	SCKR	AUDIO SERIAL CLOCK RECEIVER
	SCL	SERIAL CLOCK
	SCLK	SERIAL CLOCK
	SDA	SERIAL DATA
	SEG0~UP	FL SEGMENT OUTPUT
	SELCLK	SELECT CLOCK
	SEN	SERIAL PORT ENABLE
	SIN1, 2	SERIAL DATA IN
	SOUT1, 2	SERIAL DATA OUT
	SPDI	SERIAL PORT DATA INPUT
	SPDO	SERIAL PORT DATA OUTPUT
	SPEN	SERIAL PORT R/W ENABLE
	SPRCLK	SERIAL PORT READ CLOCK
	SPWCLK	SERIAL PORT WRITE CLOCK
	SQCK	SUB CODE Q CLOCK
	SQCX	SUB CODE Q DATA READ CLOCK
	SRDATA	SERIAL DATA
	SRMADR	SRAM ADDRESS BUS
	SRMDT0~7	SRAM DATA BUS 0~7
	SS	START/STOP
	STAT	STATUS
	STCLK	STREAM DATA CLOCK
	STD0~UP	STREAM DATA
	STENABLE	STREAM DATA INPUT ENABLE
	STSEL	STREAM DATA POLARITY SELECT
	STVALID	STREAM DATA VALIDITY
	SUBC	SUB CODE SERIAL
	SBCK	SUB CODE CLOCK
	SUBQ	SUB CODE Q DATA
	SYSCLK	SYSTEM CLOCK
T	TE	TRACKING ERROR
	TIBAL	BALANCE CONTROL
	TID	BALANCE OUTPUT 1
	TIN	BALANCE INPUT
	TIP	BALANCE INPUT
	TIS	BALANCE OUTPUT 2
	TPSN	OP AMP INPUT
	TPSO	OP AMP OUTPUT
	TPSP	OP AMP INVERTED INPUT
	TRCRS	TRACK CROSS SIGNAL
	TRON	TRACKING ON
	TRSON	TRAVERSE SERVO ON

INITIAL/LOGO		ABBREVIATIONS
V	VBLANK	V BLANKING
	VCC	COLLECTOR POWER SUPPLY VOLTAGE
	VCDCONT	VIDEO CD CONTROL (TRACKING BALANCE)
	VDD	DRAIN POWER SUPPLY VOLTAGE
	VFB	VIDEO FEED BACK
	VREF	VOLTAGE REFERENCE
	VSS	SOURCE POWER SUPPLY VOLTAGE
W	WAIT	BUS CYCLE WAIT
	WDCK	WORD CLOCK
	WEH	WRITE ENABLE HIGH
	WSR	WORD SELECT RECEIVER
X	X	X' TAL
	XALE	X ADDRESS LATCH ENABLE
	XAREQ	X AUDIO DATA REQUEST
	XCDROM	X CD ROM CHIP SELECT
	XCS	X CHIP SELECT
	XCSYNC	X COMPOSITE SYNC
	XDS	X DATA STROBE
	XHSYNCO	X HORIZONTAL SYNC OUTPUT
	XHINT	XH INTERRUPT REQUEST
	XI	X' TAL OSCILLATOR INPUT
	XINT	X INTERRUPT
	XMW	X MEMORY WRITE ENABLE
	XO	X' TAL OSCILLATOR OUTPUT
	XRE	X READ ENABLE
	XSRMCE	X SRAM CHIP ENABLE
	XSRMOE	X SRAM OUTPUT ENABLE
	XSRMWE	X SRAM WRITE ENABLE
	XVCS	X V-DEC CHIP SELECT
	XVDS	X V-DEC CONTROL BUS STROBE
	XVSYNCO	X VERTICAL SYNC OUTPUT

12.1.2. VHS

443NT [L]	4.43 NTSC Ⓛ
A. COMP	AUDIO COMPONENT SIGNAL
A. COMPO	AUDIO COMPONENT SIGNAL
A. D.P [L]	AUDIO DUBBING PAUSE Ⓛ
A. D/L [L]	AUDIO DUBBING PAUSE Ⓛ
A. DEF [S]	AUDIO DEFEAT
A. DEF [S] [L]	AUDIO DEFEAT
A. DUB P [L]	AUDIO DUBBING PAUSE Ⓛ
A. DUB [H]	AUDIO DUBBING Ⓗ
A. ERASE	AUDIO ERASE
A. H. SW	AUDIO HEAD SWITCHING PULSE
A. HEAD [R]	AUDIO HEAD (REC)
A. HEAD [W]	AUDIO HEAD (PLAY)
A. IN [L]	AUDIO INPUT (L)
A. IN [R]	AUDIO INPUT (R)
A. MUT [H]	AUDIO MUTE Ⓗ
A. MUTE [H]	AUDIO MUTE Ⓗ
A. OUT [L]	AUDIO OUTPUT (L)
A. OUT [R]	AUDIO OUTPUT (R)
A. RF OUT	AUDIO RF SIGNAL OUTPUT
A/VS/S. DATA	AV SW/SERIAL DATA
AC ONLINE	AC ONLINE
AC. O/EE. H	AC ONLINE/EE Ⓗ
AFC S C	AFC S CURVE
AFC [S]	AFC S CURVE
AFC. DEF	AFC DEFEAT
ARFC OUT	AUDIO RF SIGNAL OUTPUT
ART. V	ARTIFICIAL VERTICAL SYNC SIGNAL
ART. V. MM	ARTIFICIAL VERTICAL SYNC SIGNAL MONO MULTI
ART. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL Ⓗ/NORMAL
AT. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL
ATSW/TEST/NOR/SE	TEST/NORMAL/SERVICE
AUDIO IN [L]	AUDIO INPUT (L)
AUDIO IN [R]	AUDIO INPUT (R)
AUDIO OUT [L]	AUDIO OUTPUT (L)
AUDIO OUT [R]	AUDIO OUTPUT (R)
AUDIO SELECT [H]	AUDIO SELECT Ⓗ
AUDIO. L	AUDIO (L)
AUDIO. R	AUDIO (R)
AV CNT	AV CONTROL
AV CTL	AV CONTROL
AV CTL/S. CLK	AV CONTROL/SERIAL CLOCK
AV. C.M.	AV CONTROL MODE
AVCNT/METER. R	AV CONTROL/LEVEL METER (R)
AVSW/METER. L	AV SW/LEVEL METER (L)
B MODE. H	B MODE Ⓗ
B.G.P	BURST GATE PULSE
BACKUP 5V	BACK UP 5V
BAND. U.E.	BAND U
BANDVL. D	BAND VL
BI/MI [L]	BILINGUAL/MIX Ⓛ
BIL	BILINGUAL
BIL [L]	BILINGUAL Ⓛ
BIL. [H]	BILINGUAL Ⓗ
BIL/M1 [L]	BILINGUAL Ⓛ
BS CLOCK	BS CLOCK
BS DATA	BS DATA
BS LCH IN	BS L CHANNEL INPUT
BS MIX [H]	BS MIX Ⓗ
BS MON [H]	BS MONITOR Ⓗ
BS MONI [H]	BS MONITOR Ⓗ
BS RCH IN	BS R CHANNEL INPUT
BS VIDEO	BS VIDEO SIGNAL
BS VIDEO/BS1	BS VIDEO SIGNAL
BS [H]	BS Ⓗ
BS. LEVEL	BS LEVEL
BS. M [H]	BS MONITOR Ⓗ
BS/VTR [H]	BS/VTR Ⓗ
BUS CLK	BUS CLOCK
BUS LSN	BUS LISTEN
BUS TLK	BUS TALK
BUZZER	BUZZER
CAP EC	CAPSTAN TORQUE CONTROL
CAP M GND	CAPSTAN MOTOR GND
CAP. ET	CAPSTAN TORQUE CONTROL
CAP. FG1	CAPSTAN FG1 PULSE
CAP. FG2	CAPSTAN FG2 PULSE
CAS. SW	CASSETTE SW
CCN	PLAYBACK CONTROL SIGNAL (–)
CCP	PLAYBACK CONTROL SIGNAL (+)
CHM	CONTROL SIGNAL (+)
CHP	CONTROL SIGNAL (–)
CINEM [L]	CINEMA Ⓛ
CINEMA [L]	CINEMA Ⓛ
CINEMA/MIX	CINEMA/MIX
CKL	RATCH LOCK
CKS	SHIFT LOCK
CL	CLOCK
CLK	CLOCK
CLK (C.G)	CLOCK
CLOCK. IN	CLOCK INPUT
CLP	CLAMP
COL/B/W/NOR	COLOUR/BLACK & WHITE/NORMAL
COLOR [H]	COLOUR Ⓗ
CONV	CONVERTOR
CS	CHIP SELECT
CTL GND	CONTROL GND
CTL HEAD [+]	CONTROL HEAD (+)
CTL HEAD [–]	CONTROL HEAD (–)
CTL [+]	CONTROL HEAD (+)
CTL [–]	CONTROL HEAD (–)
CUE BIAS	CUE BIAS
CURRENT LIM	CURRENT LIMMITER
CYL ET	CYLINDER TORQUE CONTROL

CYL GND	CYLINDER GND	FULL. E. 12V	FULL ERASE 12V
D.F.M. REC [H]	DELAIED FM RECORDING Ⓗ	GND [A]	GND (ANALOG)
D. FM REC [L]	DELAIED FM RECORDING Ⓛ	GND [TU]	GND (TUNER)
D. GND	DIGITAL GND	GND/N. SW. 12V	GND/NON SW 12V
D. REC [H]	DELAYED RECORDING Ⓗ	H. SYNC	HORIZONTAL SYNC
D4/S. LED	D4/STILL LED	H. AMP. SW	HEAD AMP SW PULSE
D4/STILLED	D4/STILL LED	H. P <R>	HEAD PHONE (R)
DAC [CLK]	TUNER DAC (CLOCK)	H. P <L>	HEAD PHONE (L)
DAC/FSCS	TUNER DAC/FS CHIP SELECT	H. P GND	HEAD PHONE GND
DAREC [H]	DELAYED AUDIO RECORDING Ⓗ	H. P OUT [L]	HEAD PHONE OUTPUT (L)
DATA	DATA	H. P OUT [R]	HEAD PHONE OUTPUT (R)
DECODER [L]	DECODER (L)	H. SW	HEAD SW PULSE
DECODER [R]	DECODER (R)	HEAD PHONE [L]	HEAD PHONE (L)
DEW	DEW	HEAD PHONE [R]	HEAD PHONE (R)
DEW SNS	DEW SENSOR	HEAD SW	HEAD SW
DFMRE [H]	DELAYED FM AUDIO RECORDING Ⓗ	HEATER [+]	HEATER (+)
E. REC 5V	EXCEPT RECORDING 5V	HEATER [–]	HEATER (–)
EC	ERROR TORQUE CONTROL	HSS	HORIZONTAL SYNC SIGNAL
ECR	ERROR TORQUE CONTROL	HTR [+]	HEATER (+)
	REFERENCE VOLTAGE	HTR [–]	HEATER (–)
EDT TRIG [L]	EDIT TRIGGER Ⓛ	I RFE	REFERENCE CURRENT
EDIT [H]	EDIT Ⓗ	ICL	CONTROL AGC CIRCUIT
EE [H]	EE Ⓗ	IF	INTERMEDIATE FREQUENCY
EE [H]/INS [M]	EE Ⓗ/INSERT Ⓜ	IN SELA1	INPUT SELECT A1 POSITION
EE. VV. TR	EE/VV/TRICK PLAY	IN SELA2	INPUT SELECT A2 POSITION
EJECT. PO	EJECT POSITION	IN SELA3	INPUT SELECT A3 POSITION
EJECT/VDET	EJECT/REVERSE SLOW LOCK	INS L/R [L]	INSERT Lch/Rch Ⓛ
ENV. SEL	ENVELOPE SELECT	INS. [H]	INSERT Ⓗ
ENVE. OUT	ENVELOPE OUTPUT	INSEL A1	INPUT SELECT A1 POSITION
ENVE. SEL	ENVELOPE SELECT	INSEL A2	INPUT SELECT A2 POSITION
ENV SELECT	ENVELOPE SELECT	INSERT	INSERT
EP [H]	LP Ⓗ	INSERT [H]	INSERT Ⓗ
EP/LP [H]	LP Ⓗ	IO CS	INPUT/OUTPUT CHIP SELECT
EP/LP/SP	LP/SP	JOG1	JOG1
EP/SS [H]	LP/SLOW/STILL/STOP Ⓗ	JOG S3 LED/FOWRD	JOG LED/FORWARD LED
EPROMCS	EPROM CHIP SELECT	JOG/F. LED	JOG LED/FORWARD LED
EX. REC 5V	EXCEPT RECORDING 5V	JSB [H]	JSB Ⓗ
FF/REW [L]	FIRST FORWARD/REWIND Ⓛ	JST. CLCK	JUST CLOCK
FG1 IN	FG1 PULSE INPUT	JST. CLK	JUST CLOCK
FG2 IN	FG2 PULSE INPUT	JST. CLOCK	JUST CLOCK
FILTER ADJUSTMENT	FILTER ADJUSTMENT	L. OUT	Lch OUTPUT
FLY ERASE [H]	FLYING ERASE HEAD ON Ⓗ	L. CH [H]	Lch Ⓗ
FLY ON [H]	FLYING ERASE HEAD ON Ⓗ	L. CH [L]	Lch Ⓛ
FLY. E [H]	FLYING ERASE HEAD ON Ⓗ	LED (MAIN)	LED (MAIN)
FM MUT [H]	FM AUDIO MUTE Ⓗ	LED (STEREO)	LED (STEREO)
FM MUTE [H]	FM AUDIO MUTE Ⓗ	LED (SUB)	LED (SUB)
FM OUT [L]	FM OUTPUT (L)	LED CKL	LED SERIAL CLOCK
FM OUT [R]	FM OUTPUT (R)	LED CKS	LED SERIAL CLOCK
FM PACK OUT [L]	FM PACK OUTPUT (L)	LED DATA	LED SERIAL DATA
FM PACK OUT [R]	FM PACK OUTPUT (R)	LINE IN 1 [L]	LINE INPUT 1 (L)
FM/BS SEL [L]	FM/BS SELECT (L)	LINE IN 1 [R]	LINE INPUT 1 (R)
FM/BS SEL [R]	FM/BS SELECT (R)	LINE IN 2 [L]	LINE INPUT 2 (L)
FS. CLK	FS CLOCK	LINE IN 2 [R]	LINE INPUT 2 (R)
FUL. E [H]	FULL ERASE HEAD ON Ⓗ	LINE IN V	LINE INPUT VIDEO
FULL. E [H]	FULL ERASE HEAD ON Ⓗ	LINE IN [L]	LINE INPUT (L)

LINE IN [R]	LINE INPUT (R)	P-OFF [H]	POWER OFF Ⓗ
LINE OUT [L]	LINE OUTPUT (L)	P-OFF [L]	POWER OFF Ⓛ
LINE OUT [R]	LINE OUTPUT (R)	P. FAIL	POWER FAILURE DETECT
LP [H]	LP Ⓗ	P. OFF [H]	POWER OFF Ⓗ
LPTRI [L]	LP TRICK PLAY Ⓛ	P. OFF [L]	POWER OFF Ⓛ
Lch/A. DUB	Lch/AUDIO DUBBING	PAL [H]	PAL Ⓗ
M GND	MOTOR GND	PAL [L]/NTSC [H]	PAL Ⓛ/NTSC Ⓗ
M REG	MOTOR REGULATOR	PB ADJ OUT	PLAYBACK ADJUST OUTPUT
MAIN OUT	MAIN OUTPUT	PB OUT	PLAYBACK OUTPUT
MAIN [L]	MAIN Ⓛ	PB. H	PLAYBACK Ⓗ
MAIN/MONO	MAIN/MONAURAL	PFG	PG/FG
MAX IN	MAXIMAM INPUT	PHOTSN +B	PHOTO SENSOR +B
MES [H]	MESECAM Ⓗ	PICT. CNT	PICTURE CONTROL
MESE [H]	MESECAM Ⓗ	PLAY LED/RVS LED	PLAY LED/REVERSE LED
MESE [L]	MESECAM Ⓛ	PLAY. PO	PLAY POSITION
METER 5V	LEVEL METER 5V	PLAY/R. LED	PLAY LED/REVERSE LED
METER [L]	LEVEL METER (L)	PLY/DEW	PLAY/DEW Ⓗ
METER [R]	LEVEL METER (R)	POWER OFF [L]	POWER OFF Ⓛ
METER. L/AVS	LEVEL METER (L)	PREROLL [H]	PREROLL Ⓗ
METER. R/AVC	LEVEL METER (R)	PWRFAIL	POWER FAILURE DETECT
MI/BI [L]	MIX Ⓗ/BILIGUAL	R. CH [H]	Rch Ⓗ
MIC GND	MIC GND	R. CH [L]	Rch Ⓛ
MIC IN	MIC INPUT	R. ST	RESET
MIC IN [L]	MIC INPUT (L)	R/S/F	REVERSE Ⓗ/STOP Ⓜ/FORWARD Ⓛ
MIC IN [R]	MIC INPUT (R)	RCH [H]	Rch Ⓗ
MIC [H]	MIC Ⓗ	REC 12V	RECORDING 12V
MIX [H]	MIX Ⓗ	REC CHROMA	RECORDING CHROMINANCE SIGNAL
MIX [H]/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ	REC H	RECORDING Ⓗ
MIX/CINE	MIX Ⓗ/CINEMA SOUND Ⓛ	REC IN	RECORDING INPUT
MIX/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ	REC OUT [L]	RECORDING OUTPUT Ⓛ
MN. H/M. L	MONAURAL Ⓗ/MAIN Ⓛ	REC START	RECORDING START
MN. H/MAI. L	MONAURAL Ⓗ/MAIN Ⓛ	REC VR [C]	RECORDING VOLUME (COMMON)
MN2/MES. L	MONAURAL 2/MESECAM Ⓛ	REC VR [L]	RECORDING VOLUME (L)
MODE SEL	AUDIO MODE SELECT	REC VR [R]	RECORDING VOLUME (R)
MODE SW	AUDIO MODE SW	REC Y	RECORDING LUMINANCE SIGNAL
MODE. S. IN	AUDIO MODE SELECT INPUT	REC [H]	RECORDING Ⓗ
MODE. S. OUT	AUDIO MODE SELECT OUTPUT	REC. C	RECORDING CHROMINANCE SIGNAL
MONO [H]	MONAURAL Ⓗ	REC. Y	RECORDING LUMINANCE SIGNAL
MONO [H]/MAIN [L]	MONAURAL Ⓗ/MAIN Ⓛ	REC/EE CTL	RECORDING/EE CONTROL
MONO2 [L]	MONAURAL 2	REEL-T	REEL PULSE (TAKE-UP)
MONO2/MESE [FM(L)]	MONAURAL 2/MESECAM (FM Ⓛ)	REEL-S	REEL PULSE (SUPPLY)
MOTOR GND	MOTOR GND	REGULATOR FILTER	REGULATOR FILTER
MUTE	MUTE	RESET	RESET
N. A. REC [L]	NORMAL AUDIO RECORDING	REV M F/R	REVIEW MOTOR FORWARD/REVERSE
N. SW 12V	NON SW 12V	REV M V1	REVIEW MOTOR V1
N. SW. 5. DET	NON SW 5V DETECT	REV M V2	REVIEW MOTOR V2
NICAM	NICAM	REV MOTOR F/R	REVIEW MOTOR FORWARD/REVERSE
NICAM [L]	NICAM Ⓛ	REV MOTOR V1	REVIEW MOTOR V1
NOL [H]	PAL Ⓗ/4.43 NTSC Ⓜ/3.58 NTSC Ⓛ	REV MOTOR V2	REVIEW MOTOR V2
NOR/SOFT [H]	NORMAL/SOFT TAPE PLAY Ⓗ	REV MOTOR [+]	REVIEW MOTOR (+)
NORMAL [H]	NORMAL Ⓗ	REV MOTOR [–]	REVIEW MOTOR (+)
NR BIAS	NR BIAS	REV. M. GND	REVIEW MOTOR GND
NTSC [L]	NTSC Ⓛ	RF. CHROMA	RF CHROMINANCE SIGNAL
OCH	CONTROL AGC CIRCUIT		
OUT	OUTPUT		

RF OUT	RF OUTPUT	SYSCON 5V	SYSTEM CONTROL 5V
RF Y	RF LUMINANCE SIGNAL	SYSTEM	SYSTEM SW
RF. Y. IN	RF LUMINANCE SIGNAL INPUT	T-PHOTO	TAKE-UP PHOTO TRANSISTOR
RF. Y. OUT	RF LUMINANCE SIGNAL OUTPUT	T-RL. PLS	TAKE-UP REEL PULSE
ROTAR. SW	ROTARY SW	T. BUSCLK	TIMER BUS CLOCK
ROTARY	ROTARY SW	T. BUSLSN	TIMER BUS LISTEN
RST	RESET	T. BUSTLK	TIMER BUS TALK
RST [L]	RESET Ⓛ	T. END [L]	TAPE END Ⓛ
Rch/INST	Rch/INSERT	T. PHOTO	TAKE-UP PHOTO TRANSISTOR
S IN	SERIAL DATA INPUT	TAPE END [L]	TAPE END Ⓛ
S OUT	SERIAL DATA OUTPUT	TAPE END [L]/CAM	TAPE END Ⓛ/CAMERA PAUSE
S-PHOTO	SUPPLY PHOTO TRANSISTOR	TEST	TEST MODE
S-RL. PLS	SUPPLY REEL PULSE	TPZ	TRAPEZOIDAL WAVE CIRCUIT
S. CLK	SERIAL CLOCK	TRIC [L]	TRIC PLAY Ⓛ
S. CLK/AV	SERIAL CLOCK/AV	TRICK [L]	TRIC PLAY Ⓛ
S. DATA	SERIAL DATA	TRK. ENV	AUTO TRACKING ENVELOPE DETECT
S. DATA/A	SERIAL DATA	TU. AUDIO	TUNER AUDIO
S. PHOTO	SUPPLY PHOTO TRANSISTOR	TU. GND	TUNER GND
S. TAB [L]	SAFETY TAB SW ON Ⓛ	TU. V. IN	TUNER VIDEO SIGNAL INPUT
S/P/N	SECAM/PAL/NTSC	TU. VIDEO	TUNER VIDEO
SC IN	SERIAL CLOCK INPUT	TUN NOR IN	TUNER NORMAL INPUT
SC OUT	SERIAL CLOCK OUTPUT	TUN R	TUNER AUDIO (R)
SCK SELECT	SERIAL CLOCK SELECT	TUN. AUDIO IN	TUNER AUDIO INPUT
SEL OUT [L]	SELECT OUTPUT (L)	TUNER 12V	TUNER 12V
SEL OUT [R]	SELECT OUTPUT (R)	TUNER L	TUNER AUDIO (L)
SHUTTLE 1	SHUTTLE 1	TUNER V IN	TUNER VIDEO SIGNAL INPUT
SIF	SOUND INTERMEDIATE FREQUENCY	TUNER [L]	TUNER AUDIO (L)
SLMUT [H]	INPUT SELECT MUTE Ⓗ	TUNER [N]	TUNER AUDIO (NORMAL)
SLNID [+]	SOLENOID (+)	TUNER [R]	TUNER AUDIO (R)
SLNID [–]	SOLENOID (–)	TUNER. 12	TUNER 12V
SLW TR. MM	SLOW TRACKING MONO MULTI	TUOFF [H]	TUNER OFF Ⓗ
SLW TR. REF	SLOW TRACKING REFERENCE VOLTAGE	TV. AUDIO	TV AUDIO
		TV/VTR	TV/VTR
SNS. GND	SENSOR GND	TXTON [L]	TEXT ON Ⓛ
SOFT [H]	SOFT TAPE PLAY Ⓗ	U. REG45V	UNREGULATOR 45V
SOFT [H]/NORMAL	SOFT TAPE PLAY Ⓗ/NORMAL Ⓗ	UNREG	UNREGULATOR
SOLENOID ON [L]	SOLENOID ON Ⓛ	UNREG19V	UNREGULATOR 19V
SP [H]	SP Ⓗ	V. REF	REFERENCE VOLTAGE
SP/L/SLP	SP/LP	V. EE [H]	VIDEO EE Ⓗ
SSS [L]	SLOW/STILL/STOP	V. EE [L]	VIDEO EE Ⓛ
STEREO LED	STEREO LED	VCO REF	REFERENCE OSCILLATER
STEREO [H]	STEREO Ⓗ	VD. IN	VIDEO SIGNAL INPUT
STEREO [L]	STEREO Ⓛ	VD. OUT	VIDEO SIGNAL OUTPUT
STOP. PO	STOP POSITION	VIDEO EE [L]	VIDEO EE Ⓛ
STOP/5V	STOP POSITION/5V	VIDEO IN	VIDEO SIGNAL INPUT
STOP1/TAPE SEL	STOP1 POSITION/TAPE SELECT	VIDEO OUT	VIDEO SIGNAL OUTPUT
STOP1/PAL:ST	STOP1 POSITION/PAL	VM	MOTOR VOLTAGE
STOP2. PO	STOP 2 POSITION	VM DOWN [L]	MOTOR VOLTAGE DOWN Ⓛ
STOP2/S-TAB	STOP 2 POSITION/SAFETY TAB SW	VSS	VERTICAL SYNC SIGNAL
STREO [H]	STEREO Ⓗ	VTR [H]	VTR Ⓗ
SUB BIAS	SUB BIAS	VTR. 12V	VTR 12V
SUB. SW	SUB SW	X IN	OSCILLATOR INPUT
SVHS CAS [L]	S-VHS CASSETTE Ⓛ	X OUT	OSCILLATOR OUTPUT
SW. 5. DET	SW 5V DETECT		
SYNC [L]	SYNC Ⓛ		

VR0508007CE

Service Manual

Diagrams and Replacement Parts List

DVD Video Recorder

DMR-ES40VP
DMR-ES40VPC

Vol. 1
Colour
(S).....Silver Type

S1. About Indication of The Schematic Diagrams

S1.1. Important Safety Notice

COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY THE SAME TYPE.

1.Although reference number of the parts is indicated on the P.C.B. drawing and/or schematic diagrams, it is NOT mounted on the P.C.B. when it is displayed with "$" mark.

2.It is only the "Test Round" and no terminal (Pin) is available on the P.C.B. when the TP (Test Point) indicated as "●" mark.

3.The voltage being indicated on the schematic diagram is measured in "Standard-Playback" mode when there is no specify mode is mentioned.

4.Although the voltage and waveform available on here is measured with standard frame, it may be differ from actual measurement due to modification of circuit and so on.

5.The voltage being indicated here may be include observational-error (deviation) due to internal-resistance and/or reactance of equipment. Therefore, handle the value indicated on here as reference.

6.Use the parts number indicated on the Replacement Parts List .

7.Indication on Schematic diagrams:

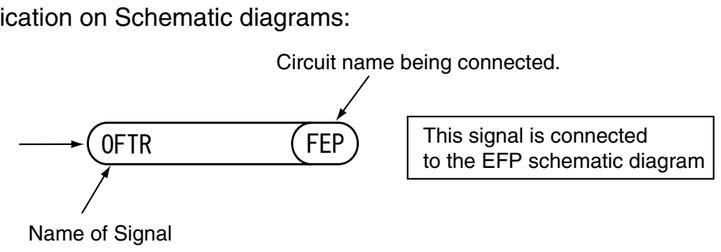


Table of contents

S2. Voltage and Waveform Chart

S2.1. Main P.C.B.

REF No.	PIN No.	REC	PB	EE
IC1511	1	1.2	1.2	1.2
IC1511	2	2.4	2.4	2.4
IC1511	3	0.2	0.1	0.2
IC1511	4	0	0	0
IC1512	1	0	0	0
IC1512	2	1.2	1.2	1.2
IC1512	3	5	5	5
IC1512	4	0	0	0
IC2501	1	12.2	12.2	12.2
IC2501	2	0.1	0.1	0.1
IC2501	3	0	0	0
IC2501	4	0.1	0.1	0.1
IC2501	5	0	0	0
IC2501	6	0	0	0
IC2501	7	16.1	16.2	16.1
IC2501	8	0	0	0
IC2501	9	2.8	2.8	2.8
IC2501	10	1.6	1.6	1.6
IC2501	11	1.6	1.6	1.6
IC2501	12	0.6	0.6	0.6
IC2501	13	1.5	1.5	1.5
IC2501	14	2.4	2.4	2.4
IC2501	15	2.5	2.5	2.5
IC2501	16	2.5	2.5	2.5
IC2501	17	2.5	2.5	2.5
IC2501	18	1.3	1.3	1.3
IC2501	19	5	5	5
IC2501	20	3.8	3.6	3.8
IC2501	21	12.2	12.2	12.2
IC2501	22	3.8	3.6	3.8
IC2501	23	3.8	3.6	3.8
IC2501	24	0	0	0
IC2501	25	3.8	3.6	3.8
IC2501	26	0	0	0
IC2501	27	0	0	0
IC3001	1	0	0	0
IC3001	2	0	0	0
IC3001	3	0	0	0
IC3001	4	5.1	5.1	5.1
IC3001	5	2.1	2	2.1
IC3001	6	2.6	2.5	2.6
IC3001	7	2.8	2.8	2.8
IC3001	8	1.8	1.4	1.8
IC3001	9	1.8	1.3	1.8
IC3001	10	2.3	1.9	2.3
IC3001	11	2.6	3	2.6
IC3001	12	1.8	0.6	1.8
IC3001	13	0	0	0
IC3001	14	2.7	2.3	2.7
IC3001	15	2.8	2.8	2.8
IC3001	16	2	2	2
IC3001	17	2.8	2.8	2.8
IC3001	18	1.9	1.9	1.9
IC3001	19	2.8	2.8	2.8
IC3001	20	0	0	0
IC3001	21	2.8	2.8	2.8
IC3001	22	5	5	5
IC3001	23	2.3	2.3	2.3
IC3001	24	0.5	0.6	0.5
IC3001	25	0	0	0
IC3001	26	3	2.8	3
IC3001	27	0.5	0.6	0.5
IC3001	28	0	0	0
IC3001	29	2.4	2.4	2.4
IC3001	30	2.8	2.9	2.8

REF No.	PIN No.	REC	PB	EE
IC3001	31	0.4	0.4	0.4
IC3001	32	2.4	2.5	2.4
IC3001	33	2	2.1	2
IC3001	34	2	2.2	2
IC3001	35	3	3	3
IC3001	36	0	2.3	0
IC3001	37	3	3	3
IC3001	38	2.1	2.2	2.1
IC3001	39	1.4	1.4	1.4
IC3001	40	2.1	2.1	2.1
IC3001	41	2.9	3	2.9
IC3001	42	2	2	2
IC3001	43	2.1	2.1	2.1
IC3001	44	0	0	0
IC3001	45	3.2	3.2	3.2
IC3001	46	3.2	3.2	3.2
IC3001	47	5	5	5
IC3001	48	4.9	5	4.9
IC3001	49	3.2	3.2	3.2
IC3001	50	5	5	5
IC3001	51	2.1	2.1	2.1
IC3001	52	5	5	5
IC3001	53	2.6	2.6	2.6
IC3001	54	0	0	0
IC3001	55	2.1	2.1	2.1
IC3001	56	0	0	0
IC3001	57	2.2	2.2	2.2
IC3001	58	2.3	2.3	2.3
IC3001	59	5	5	5
IC3001	60	5	5	5
IC3001	61	4.1	4.1	4.1
IC3001	62	2.3	2.3	2.3
IC3001	63	2.2	2.2	2.2
IC3001	64	2.5	2.5	2.5
IC3001	65	2.2	2.2	2.2
IC3001	66	2.5	2.5	2.5
IC3001	67	2.2	2.2	2.2
IC3001	68	1.2	1.2	1.2
IC3001	69	1.9	1.9	1.9
IC3001	70	2.7	0.9	2.7
IC3001	71	0.5	0.4	0.5
IC3001	72	5	5	5
IC3001	73	4.1	4.2	4.1
IC3001	74	4	4.1	4
IC3001	75	2.7	2.8	2.7
IC3001	76	2.2	2.2	2.2
IC3001	77	2.8	2.8	2.8
IC3001	78	0	0	0
IC3001	79	0	0	0
IC3001	80	2.5	2.5	2.5
IC3001	81	0.7	0.7	0.7
IC3001	82	0	0	0
IC3001	83	3.4	3.4	3.4
IC3001	84	5	5	5
IC3001	85	2.5	2.3	2.5
IC3001	86	2.3	2.3	2.3
IC3001	87	2.5	2.4	2.5
IC3001	88	0	0	0
IC3001	89	0	2.3	0
IC3001	90	0	2.3	0
IC3001	91	0	2.3	0
IC3001	92	5.1	5.1	5.1
IC3001	93	0.5	0.5	0.5
IC3001	94	2.5	2.5	2.5
IC3001	95	2.5	2.5	2.5

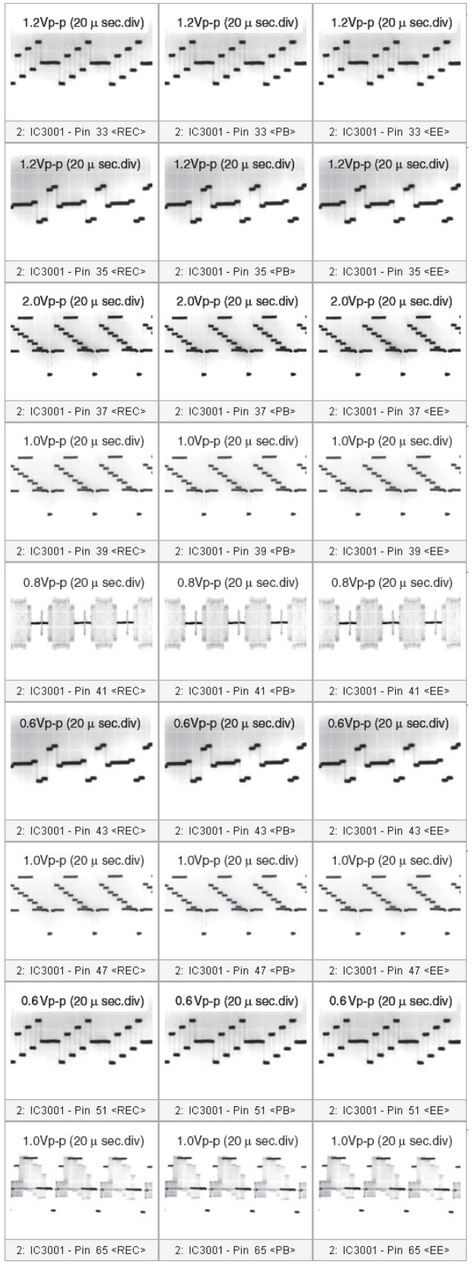
REF No.	PIN No.	REC	PB	EE
IC3001	96	2.5	2.5	2.5
IC3001	97	0	0	0
IC3001	98	2.3	2.5	2.3
IC3001	99	0	0	0
IC3001	100	2.6	2.5	2.6
IC3701	1	1.7	1.7	1.7
IC3701	2	0	0	0
IC3701	3	2.7	2.7	2.7
IC3701	4	5	5	5
IC3701	5	1.8	1.7	1.8
IC3701	6	4.8	5	4.8
IC3701	7	1.4	1.4	1.4
IC3701	8	4.7	4.7	4.7
IC3701	9	0.1	0	0.1
IC3701	10	2.7	2.7	2.7
IC3701	11	0	0	0
IC3701	12	1.4	1.4	1.4
IC3701	13	4.7	5	4.7
IC3701	14	1.4	1.4	1.4
IC3701	15	0	0	0
IC3701	16	0	0	0
IC3701	17	2.6	2.7	2.6
IC3701	18	0	0	0
IC3701	19	1.4	1.4	1.4
IC3701	20	4.7	4.9	4.7
IC3701	21	1.4	1.4	1.4
IC3701	22	0	0	0
IC3701	23	0.1	0	0.1
IC3701	24	2.7	2.7	2.7
IC3701	25	5	5	5
IC3701	26	1.8	1.8	1.8
IC3701	27	1.8	1.8	1.8
IC3701	28	2	2	2
IC3701	29	2	2	2
IC3701	30	2.2	2.2	2.2
IC3701	31	0	0	0
IC3701	32	2.2	2.2	2.2
IC3701	33	2.2	2.2	2.2
IC3701	34	2.2	2.2	2.2
IC3701	35	2.2	2.2	2.2
IC3701	36	1.8	1.8	1.8
IC3701	37	1.8	1.8	1.8
IC3701	38	0	0	0
IC3701	39	1.9	1.9	1.9
IC3701	40	5	5	5
IC3701	41	2.8	2.8	2.8
IC3701	42	0	0	0
IC3701	43	2.8	2.8	2.8
IC3701	44	5	5	5
IC3701	45	2.8	2.8	2.8
IC3701	46	2.8	2.8	2.8
IC3701	47	1.9	1.9	1.9
IC3701	48	4.7	4.7	4.7
IC3701	49	2.8	2.8	2.8
IC3701	50	0	0	0
IC3701	51	2.8	2.8	2.8
IC3701	52	5	5	5
IC3701	53	2.8	2.8	2.8
IC3701	54	2.9	2.9	2.9
IC3701	55	1	1	1
IC3701	56	0	0	0
IC3701	57	4.9	4.9	4.9
IC3701	58	4.9	4.8	4.9
IC3701	59	5	5	5
IC3701	60	0	0	0

REF No.	PIN No.	REC	PB	EE
IC3701	61	0	0	0
IC3701	62	0.8	0.8	0.8
IC3701	63	0.8	0.8	0.8
IC3701	64	5	5	5
IC3701	65	1.3	1.1	1.3
IC3701	66	0	0	0
IC3701	67	1.8	1.5	1.8
IC3701	68	0	0	0
IC3701	69	2.1	2.1	2.1
IC3701	70	0	0	0
IC3701	71	1.3	1.1	1.3
IC3701	72	5	5	5
IC3701	73	1.3	1.1	1.3
IC3701	74	0	0	0
IC3701	75	2.1	2.1	2.1
IC3701	76	0	0	0
IC3701	77	0	0	0
IC3701	78	5	5	5
IC3701	79	0	0	0
IC3701	80	0	0	0
IC3902	1	4.8	4.8	4.8
IC3902	2	2.2	1.9	2.2
IC3902	3	5.1	5.1	5.1
IC3902	4	2.2	1.9	2.2
IC3902	5	0	0	0
IC3902	6	2	2	2
IC4501	1	2.4	2.4	2.4
IC4501	2	0	0	0
IC4501	3	2.4	2.4	2.4
IC4501	4	0.1	0	0.1
IC4501	5	0	0	0
IC4501	6	2.5	2.5	2.5
IC4501	7	2	2	2
IC4501	8	0	0	0
IC4501	9	0	0	0
IC4501	10	0	0	0
IC4501	11	0	0	0
IC4501	12	2	2	2
IC4501	13	0	0	0
IC4501	14	0	0	0
IC4501	15	0	0	0
IC4501	16	2.5	2.5	2.5
IC4501	17	0.5	0.5	0.5
IC4501	18	2.5	2.5	2.5
IC4501	19	2.5	2.5	2.5
IC4501	20	2	0	2
IC4501	21	1.9	0	1.9
IC4501	22	2	0	2
IC4501	23	0	0	0
IC4501	24	2.1	0.7	2.1
IC4501	25	5	5	5
IC4501	26	2.1	0	2.1
IC4501	27	0	2.4	0
IC4501	28	4.3	4.3	4.3
IC4501	29	3.9	1.8	3.9
IC4501	30	3.7	1.8	3.7
IC4501	31	1.1	1.8	1.1
IC4501	32	2.5	2.5	2.5
IC4501	33	2.5	2.5	2.5
IC4501	34	0.5	0.5	0.5
IC4501	35	2.5	2.5	2.5
IC4501	36	0	0	0
IC4501	37	2	2	2
IC4501	38	0	0	0
IC4501	39	0	0	0

REF No.	PIN No.	REC	PB	EE
IC4501	40	5	5	5
IC4501	41	0	0	0
IC4501	42	4.1	4.1	4.1
IC4501	43	4	4	4
IC4501	44	3.3	3.3	3.3
IC4501	45	1.6	1.6	1.6
IC4501	46	4.9	4.2	4.9
IC4501	47	2.5	2.5	2.5
IC4501	48	2.5	2.5	2.5
IC4501	49	1	1	1
IC4501	50	0.9	0.9	0.9
IC4501	51	6	6	6
IC4501	52	6	6	6
IC4501	53	6	6	6
IC4501	54	0	0	0
IC4501	55	0	0	0
IC4501	56	0	0	0
IC4501	57	6.1	6.1	6.1
IC4501	58	12.2	12.2	12.2
IC4501	59	6.1	6.1	6.1
IC4501	60	0	0	0
IC4501	61	2.5	2.5	2.5
IC4501	62	2.4	2.4	2.4
IC4501	63	0	0	0
IC4501	64	0	0	0
IC4801	1	6.1	6.1	6.1
IC4801	2	6.1	6.1	6.1
IC4801	3	6.1	6.1	6.1
IC4801	4	6.1	6.1	6.1
IC4801	5	6.1	6.1	6.1
IC4801	6	0	0	0
IC4801	7	0	0	0
IC4801	8	0	0	0
IC4801	9	0	0	0
IC4801	10	0	0	0
IC4801	11	6.1	6.1	6.1
IC4801	12	6.1	6.1	6.1
IC4801	13	6.1	6.1	6.1
IC4801	14	6.1	6.1	6.1
IC4801	15	6.1	6.1	6.1
IC4801	16	12.2	12.2	12.2
IC4802	1	6.1	6.1	6.1
IC4802	2	6.1	6.1	6.1
IC4802	3	6.1	6.1	6.1
IC4802	4	0	0	0
IC4802	5	6.1	6.1	6.1
IC4802	6	6.1	6.1	6.1
IC4802	7	6.1	6.1	6.1
IC4802	8	12.2	12.2	12.2
IC4803	1	4.6	4.6	4.6
IC4803	2	0	0	0
IC4803	3	1.2	1.2	1.2
IC4803	4	8.9	8.9	8.9
IC4803	5	12.4	12.4	12.4
IC4804	1	-	-	-
IC4804	2	4.4	4.4	4.4
IC4804	3	4.4	4.4	4.4
IC4804	4	-	-	-
IC4804	5	-	-	-
IC4804	6	-	-	-
IC4804	7	-	-	-
IC4804	8	3.3	3.3	3.3
IC4804	9	4.4	4.4	4.4
IC4804	10	4.4	4.4	4.4
IC4804	11	4.4	4.4	4.4

REF No.	PIN No.	REC	PB	EE
IC4804	12	4.4	4.4	4.4
IC4804	13	4.4	4.4	4.4
IC4804	14	4.4	4.4	4.4
IC4804	15	0	0	0
IC4804	16	4.4	4.4	4.4
IC4804	17	-	-	-
IC4804	18	4.4	4.4	4.4
IC4804	19	-	-	-
IC4804	20	4.9	4.9	4.9
IC4804	21	4.9	4.9	4.9
IC4804	22	0	0	0
IC4804	23	4.4	4.4	4.4
IC4804	24	4.4	4.4	4.4
IC4804	25	4.4	4.4	4.4
IC4804	26	4.4	4.4	4.4
IC4804	27	4.4	4.4	4.4
IC4804	28	4.4	4.4	4.4
IC4804	29	4.4	4.4	4.4
IC4804	30	8.9	8.9	8.9
IC4804	31	4.4	4.4	4.4
IC4804	32	4.4	4.4	4.4
IC6001	1	4.8	4.8	4.8
IC6001	2	0	0	0
IC6001	3	0	0	0
IC6001	4	4.7	4.7	4.7
IC6001	5	4.9	4.9	4.8
IC6001	6	4.9	4.9	4.9
IC6001	7	0.7	0.7	0.7
IC6001	8	0.7	0.7	0.7
IC6001	9	3.2	3.2	3.2
IC6001	10	0	0	0
IC6001	11	0	0	0
IC6001	12	0	0	4.8
IC6001	13	0	0	0
IC6001	14	4.8	4.8	4.9
IC6001	15	3.7	3.7	3.7
IC6001	16	0	0	0
IC6001	17	0	0	0
IC6001	18	0	0	0
IC6001	19	0	0	0
IC6001	20	0	0	0
IC6001	21	4.8	4.9	4.9
IC6001	22	0	0	0
IC6001	23	4.4	4.4	4.3
IC6001	24	2	2	2
IC6001	25	0	0	0
IC6001	26	0	0	0
IC6001	27	4.8	4.8	4.8
IC6001	28	4.8	4.8	4.8
IC6001	29	4.8	4.8	4.8
IC6001	30	4.7	4.7	4.8
IC6001	31	4.8	4.8	4.8
IC6001	32	4.8	4.8	4.8
IC6001	33	0	0	0
IC6001	34	4.9	4.9	4.9
IC6001	35	0	0	0
IC6001	36	0	0	0
IC6001	37	4.9	4.9	4.9
IC6001	38	2.2	2.2	2.2
IC6001	39	2.2	2.2	2.2
IC6001	40	0	0	0
IC6001	41	0	0	0
IC6001	42	0	0	0
IC6001	43	4.9	4.9	4.9
IC6001	44	0	0	0

<IC3001>



REF No.	PIN No.	REC	PB	EE
IC6001	45	0	0	0
IC6001	46	0	0	0
IC6001	47	1.4	1.4	1.4
IC6001	48	2.2	2.2	2.2
IC6001	49	0	0	0
IC6001	50	1	1	1
IC6001	51	5.1	5.1	5.1
IC6001	52	0	1.5	1.5
IC6001	53	5.1	5.1	5.1
IC6001	54	2	2.1	2
IC6001	55	1.4	1.4	1.5
IC6001	56	1.3	1.3	1.3
IC6001	57	0	0	0
IC6001	58	4.8	4.8	4.8
IC6001	59	0	0	0
IC6001	60	0	0	0
IC6001	61	0	0	0
IC6001	62	0	0	0
IC6001	63	0	0	0
IC6001	64	0	0	0
IC6001	65	0	0	0
IC6001	66	0	0	0
IC6001	67	0	0	0
IC6001	68	4.1	4.1	4.1
IC6001	69	3.9	3.9	3.9
IC6001	70	4.3	4.3	4.3
IC6001	71	4.2	4.2	4.2
IC6001	72	4.1	4.1	4.1
IC6001	73	0.1	0.1	0.1
IC6001	74	0	0	0
IC6001	75	4.6	4.6	4.6
IC6001	76	0	0	0
IC6001	77	4.8	4.8	4.8
IC6001	78	0	0	0
IC6001	79	5	5	5
IC6001	80	0.1	0.1	0.1
IC6001	81	0	0	0
IC6001	82	0	0	0
IC6001	83	0	0	0
IC6001	84	0	0	0
IC6001	85	0	0	0
IC6001	86	2.5	2.5	2.5
IC6001	87	2.5	2.5	2.5
IC6001	88	0	0	0
IC6001	89	0	0	0
IC6001	90	2.4	2.4	2.4
IC6001	91	2.5	2.5	2.5
IC6001	92	2.5	2.5	2.5
IC6001	93	0	0	0
IC6001	94	2.5	2.5	2.5
IC6001	95	2.5	2.5	2.5
IC6001	96	2.5	2.5	2.5
IC6001	97	2.5	2.5	2.5
IC6001	98	5	5	5
IC6001	99	4.9	4.9	4.9
IC6001	100	0	0	0
IC6201	1	4.9	4.9	4.9
IC6201	2	4.9	4.9	4.9
IC6201	3	0	0	0
IC6201	4	0	0	0
IC6201	5	0	0	0
IC6301	1	5	5	5
IC6301	2	0	0	0
IC6301	3	4.6	4.6	4.6
IC6301	4	5.8	5.8	5.8

REF No.	PIN No.	REC	PB	EE
IC7301	1	-	-	-
IC7301	2	0.3	0.3	0.3
IC7301	3	2.5	2.5	2.5
IC7301	4	0.5	0.5	0.5
IC7301	5	2.3	2.3	2.3
IC7301	6	2.3	2.3	2.3
IC7301	7	4.8	4.5	4.8
IC7301	8	-	-	-
IC7301	9	-	-	-
IC7301	10	-	-	-
IC7301	11	-	-	-
IC7301	12	-	-	-
IC7301	13	2.8	2.8	2.8
IC7301	14	2.7	2.7	2.7
IC7301	15	2.2	2.2	2.2
IC7301	16	-	-	-
IC7301	17	3.4	3.4	3.4
IC7301	18	3.4	3.4	3.4
IC7301	19	5	5	5
IC7301	20	-	-	-
IC7301	21	2.2	2.2	2.2
IC7301	22	3.4	3.4	3.4
IC7301	23	0	3.3	0
IC7301	24	4.9	4.9	4.9
IC7301	25	0	0	0
IC7301	26	1.7	1.7	1.7
IC7301	27	4.9	4.9	4.9
IC7301	28	1.7	1.7	1.7
IC7301	29	2.2	2.2	2.2
IC7301	30	2.1	2.1	2.1
IC7301	31	0	0	0
IC7301	32	2.2	2.2	2.2
IC7401	1	3.2	3.2	3.2
IC7401	2	0.2	0.2	0.2
IC7401	3	1.9	1.9	1.9
IC7401	4	0	0	0
IC7401	5	2.8	2.8	2.8
IC7401	6	0.2	0.2	0.2
IC7401	7	3.2	3.2	3.2
IC7401	8	5	5	5
IC7402	1	5	5	5
IC7402	2	-	-	-
IC7402	3	0	0	0
IC7402	4	3.4	3.4	3.4
IC7402	5	4.9	4.9	4.9
IC7402	6	-	-	-
IC7402	7	-	-	-
IC7402	8	5.8	5.8	5.8
IC7501	1	5	5	5
IC7501	2	0	0	0
IC7501	3	4.7	4.7	4.7
IC7501	4	4.9	4.9	4.9
IC7501	5	4.9	4.9	4.9
IC7501	6	4.9	4.9	4.9
IC7501	7	4.9	4.9	4.9
IC7501	8	4.9	4.9	4.9
IC7501	9	2.5	2.5	2.5
IC7501	10	2.3	2.3	2.3
IC7501	11	0	0	0
IC7501	12	2	2	2
IC7501	13	2.4	2.4	2.4
IC7501	14	0	0	0
IC7501	15	4.9	4.9	4.9
IC7501	16	4.7	4.7	4.7
IC7501	17	0	0	0

REF No.	PIN No.	REC	PB	EE
IC7501	18	1.8	1.8	0
IC7501	19	4.8	4.8	4.8
IC7501	20	4.9	4.9	4.9
IC7501	21	4.8	4.9	4.9
IC7501	22	4.9	4.9	4.9
IC7501	23	0	0	0
IC7501	24	5	5	5
IC7501	25	5	5	5
IC7501	26	3.2	3.2	3.2
IC7501	27	3.7	3.7	3.7
IC7501	28	0	0	0
IC7501	29	4.9	4.9	4.9
IC7501	30	4.9	4.9	4.9
IC7501	31	0	0	0
IC7501	32	5	5	5
IC7501	33	2.2	2.2	4.5
IC7501	34	0	0	0
IC7501	35	-3.7	-3.7	-3.7
IC7501	36	-3.7	-3.8	-3.8
IC7501	37	-5.2	-5.2	-5.2
IC7501	38	-5.2	-5.2	-5.2
IC7501	39	-5.2	-5.2	-5.2
IC7501	40	-5.2	-5.2	-5.2
IC7501	41	-2	-5	-8
IC7501	42	1.1	-5	-5
IC7501	43	1.1	-5	-5
IC7501	44	-5	-5	-5
IC7501	45	-1.9	-5	-5
IC7501	46	-5	-5	-8.1
IC7501	47	4.1	-1.1	-5
IC7501	48	-5	-5	-8.1
IC7501	49	1	-2	-5.1
IC7501	50	1	-2	-5.1
IC7501	51	-2	-2	-5.1
IC7501	52	-5	-2	-5.1
IC7501	53	-5	-5.1	-5.1
IC7501	54	-1.9	1	-2
IC7501	55	1.2	1	-5.1
IC7501	56	4.2	-2	-8.1
IC7501	57	-8.1	-8.1	-8.1
IC7501	58	3.1	3.1	3.1
IC7501	59	0	0	0
IC7501	60	5	5	5
IC7501	61	3.9	3.9	3.9
IC7501	62	4.1	4.1	4.1
IC7501	63	4.1	4.3	4.2
IC7501	64	4.8	4.8	4.8
IC7502	1	4.9	4.9	4.9
IC7502	2	4.9	4.9	4.9
IC7502	3	0	0	0
IC7502	4	-	-	-
IC7502	5	-	-	-
Q1501	E	0	0	0
Q1501	C	4.6	4.7	4.7
Q1502	E	0	0	0
Q1502	C	4.9	4.9	4.9
Q3001	E	1.6	1.6	1.6
Q3001	C	5	5	5
Q3001	B	2.2	2.2	2.2
Q3002	E	5.1	5.1	5.1
Q3002	C	5.7	5.7	5.7
Q3002	B	5.9	5.9	5.9
Q3003	E	5.1	5.1	5.1
Q3003	C	5.7	5.7	5.7
Q3003	B	5.9	5.9	5.9

REF No.	PIN No.	REC	PB	EE
Q3004	E	1.7	1.7	1.7
Q3004	C	5.1	5.1	5.1
Q3004	B	3.4	3.4	3.4
Q3901	E	3	3	3
Q3901	C	5.1	5.1	5.1
Q3901	B	3.6	3.6	3.6
Q3902	E	2.2	2.2	2.2
Q3902	C	0	0	0
Q3902	B	1.5	1.5	1.5
Q4001	E	-19.4	0	0
Q4001	C	10.4	0	0
Q4001	B	-28.1	0.7	0.7
Q4002	E	-19.4	0	0
Q4002	C	0	0	0
Q4002	B	-28.1	0.7	0.7
Q4081	E	0	0	0
Q4081	C	5.1	0.3	0.3
Q4081	B	-0.6	0.3	0.3
Q4084	E	5.7	5.7	5.7
Q4084	C	5.6	0.3	0.3
Q4084	B	4.9	5.7	5.7
Q4501	E	12.4	12.4	12.4
Q4501	C	12.3	12.3	12.3
Q4501	B	11.7	11.7	11.7
Q4502	E	5.1	5.1	5.1
Q4502	C	5.7	5.7	5.7
Q4502	B	5.8	5.8	5.8
Q4801	E	0	0	0
Q4801	C	0	0	0
Q4801	B	0	0	0
Q4802	E	0	0	0
Q4802	C	0	0	0
Q4802	B	0	0	0
Q6305	E	5	5	5
Q6305	C	5.7	5.7	5.7
Q6305	B	5.8	5.8	5.8
Q7401	E	2.4	2.4	2.4
Q7401	C	0	0	0
Q7401	B	1.7	1.7	1.7
Q7402	E	0	0	0
Q7402	C	0.1	0.1	0.1
Q7402	B	0.6	0.6	0.6
QR4001	E	5.1	5.1	5.1
QR4001	C	-28.1	5	5
QR4001	B	4.8	0	0
QR4082	E	0	0	0
QR4082	C	0	5.7	5.7
QR4082	B	4.8	0	0
QR4501	E	0	0	0
QR4501	C	0	0	0
QR4501	B	4.6	4.6	4.6
QR4802	E	0	0	0
QR4802	C	0	0	0
QR4802	B	0	-0.2	0
QR4804	E	5.8	5.8	5.8
QR4804	C	0	0	0
QR4804	B	5.8	5.8	5.8
QR4805	E	0	0	0
QR4805	C	0	0	0
QR4805	B	0	-0.2	0
QR4806	E	0	0	0
QR4806	C	0	0	0
QR4806	B	0	-0.2	0
QR4807	E	0.1	0.1	0.1
QR4807	C	0	0	0

REF No.	PIN No.	REC	PB	EE
QR4807	B	0	0	0
QR4810	E	0	0	0
QR4810	C	0	0	0
QR4810	B	4.8	4.8	4.8
QR4811	E	0	0	0
QR4811	C	0	0	0
QR4811	B	4.8	4.8	4.8
QR4812	E	0	0	0
QR4812	C	0	0	0
QR4812	B	4.8	4.8	4.8
QR4813	E	4.8	4.8	4.8
QR4813	C	4.8	4.8	4.8
QR4813	B	0	0	0
QR4816	E	0	0	0
QR4816	C	0	0	0
QR4816	B	0	-0.2	0
QR7401	E	36.3	36.3	36.3
QR7401	C	36.3	36.3	36.3
QR7401	B	0.1	0.1	0.1

S2.2. Power and Digital I/F P.C.B.

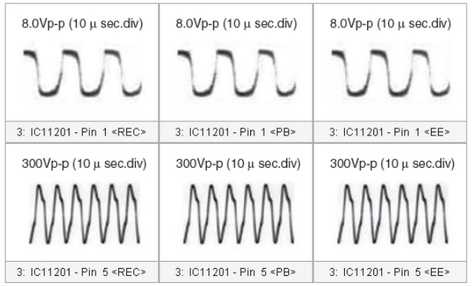
REF No.	PIN No.	REC	PB	EE
IC11201	1	2.7	2.7	2.7
IC11201	2	1.5	1.5	1.5
IC11201	3	0	0	0
IC11201	4	11.8	11.8	11.8
IC11201	5	-438	-438	-438
IC11202	1	2.2	2.2	2.2
IC11202	2	2.2	2.2	2.2
IC11202	3	0	0	0
IC11202	4	13.2	13.2	13.2
IC11202	5	-303	-303	-303
IC11301	1	3.7	3.7	3.7
IC11301	2	2.4	2.4	2.4
IC11301	3	0	0	0
IC11302	1	4.4	4.4	4.4
IC11302	2	2.4	2.4	2.4
IC11302	3	0	0	0
IC11401	1	0	0	0
IC11401	2	-	-	-
IC11401	3	11.9	11.9	12
IC11401	4	11.9	11.9	12
IC11401	5	14	14	14.1
IC11501	1	12.4	12.4	12.4
IC11501	2	4.4	4.4	4.4
IC11501	3	1.2	1.2	1.2
IC11501	4	1.1	1.1	1.1
IC11501	5	0.8	0.8	0.8
IC11501	6	0	0	0
IC11501	7	10.4	10.4	10.4
IC11501	8	12.4	12.4	12.4
IC31002	1	5.9	5.9	5.9
IC31002	2	0	0	0
IC31002	3	4.1	4.1	4.1
IC31002	4	5.9	5.9	5.9
IC31002	5	5	5	5
IC31003	1	3.3	3.3	3.3
IC31003	2	-	-	-
IC31003	3	1.3	1.3	1.3
IC31003	4	0	0	0
IC31003	5	2.3	2.3	2.3
IC31003	6	-	-	-
IC31003	7	-	-	-
IC31003	8	3.8	3.8	3.8
IC31004	1	3.3	3.3	3.3
IC31004	2	-	-	-
IC31004	3	1.3	1.3	1.3
IC31004	4	0	0	0
IC31004	5	4.7	4.7	4.7
IC31004	6	-	-	-
IC31004	7	-	-	-
IC31004	8	3.8	3.8	3.8
IC37001	1	5.8	5.8	5.8
IC37001	2	1.8	1.8	1.8
IC37001	3	1.8	1.8	1.8
IC37001	4	0	0	0
IC37001	5	1.8	1.8	1.8
IC37001	6	1.8	1.8	1.8
IC37001	7	1.8	1.8	1.8
IC37001	8	12.4	12.4	12.4
IC45001	1	1.2	1.2	1.2
IC45001	2	0	0	0
IC45001	3	4.7	4.7	4.7
IC45001	4	5.9	5.9	5.9
IC45001	5	5	5	5
IC45002	1	10.5	10.5	10.5
IC45002	2	5	5	5

REF No.	PIN No.	REC	PB	EE
IC45002	3	5	5	5
IC45002	4	0	0	0
IC45002	5	1.4	1.8	1.4
IC45002	6	1	1.5	1
IC45002	7	12.1	12.3	12.1
IC45002	8	12.4	12.4	12.4
IC45003	1	3.7	3.7	3.7
IC45003	2	2.4	2.4	2.4
IC45003	3	2.4	2.4	2.4
IC45003	4	0	0	0
IC45003	5	2.4	2.4	2.4
IC45003	6	2.4	2.4	2.4
IC45003	7	3.8	3.8	3.8
IC45003	8	10.5	10.5	10.5
P37101	1	4.9	4.9	4.9
P37101	2	4.9	4.9	4.9
P37101	3	3.2	3.2	3.2
P37101	4	3.2	3.2	3.2
P37101	5	3.2	3.2	3.2
P37101	6	5	5	5
P37101	7	0	0	0
P37101	8	5	5	5
P37101	9	0	0	0
P37101	10	3.1	3.1	3.1
P37101	11	0	0	0
P37101	12	0	0	5
P37101	13	0	0	0
P37101	14	5	5	5
P37101	15	2.3	2.3	2.3
P37101	16	0	0	0
P37101	17	5	5	5
P37101	18	0	0	0
P37101	19	0	0	0
P37101	20	4.7	4.7	4.7
P37101	21	0	0	0
P37101	22	0	0	0
P37101	23	0	0	0
P37101	24	0	0	0
P37101	25	0	0	0
P37101	26	0	0	0
P37101	27	0	0	0
P37101	28	0	0	0
P37101	29	2.5	2.5	2.5
P37101	30	0	0	0
P37101	31	2.5	2.5	2.5
P37101	32	0	0	0
P37101	33	0	0	0
P37101	34	0	0	0
P37101	35	0	0	0
P37101	36	1.4	1.4	1.4
P37101	37	0	0	0
P37101	38	3.3	3.3	3.3
P37101	39	2.4	2.4	2.4
P37101	40	0	0	0
P37101	41	2.4	2.4	2.4
P37101	42	3.3	3.3	3.3
P37101	43	0	0	0
P37101	44	0	0	0
P37101	45	0	0	0
P37101	46	0	0	0
P37101	47	0.5	0.5	0.5
P37101	48	0	0	0
P37101	49	0	0	0
P37101	50	0	0	0
P37101	51	0.6	0.6	0.6

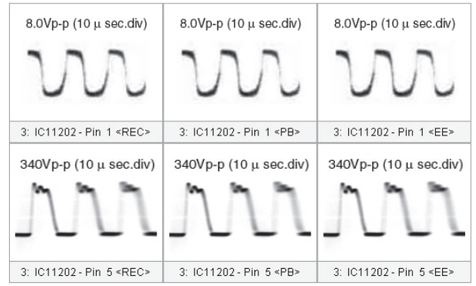
REF No.	PIN No.	REC	PB	EE
P37101	52	5	5	5
P37101	53	0	0	0
P37101	54	0	0	0
P37101	55	0.7	0.7	0.7
P37101	56	3.2	3.2	3.2
P37101	57	0	0	0
P37101	58	3.1	3.1	3.1
P37101	59	0.5	0.5	0.5
P37101	60	0	0	0
P37101	61	0	0	0
P37101	62	0	0	0
P37101	63	0.7	0.7	0.7
P37101	64	0	0	0
P37101	65	0	0	0
P37101	66	0	0	0
P37101	67	0	0	0
P37101	68	3.3	3.3	3.3
P37101	69	0	0	0
P37101	70	3.3	3.3	3.3
P37101	71	0	0	0
P37101	72	3.3	3.3	3.3
P37101	73	0	0	0
P37101	74	3.3	3.3	3.3
P37101	75	0	0	0
P37101	76	0	0	0
P37101	77	0	0	0
P37101	78	5	5	5
P37101	79	0	0	0
P37101	80	0	0	0
P37101	81	0	0	0
P37101	82	1.8	1.8	1.8
P37101	83	3.5	3.5	3.5
P37101	84	1.8	1.8	1.8
P37101	85	0	0	0
P37101	86	1.8	1.8	1.8
P37101	87	0.7	0.7	0.7
P37101	88	1.8	1.8	1.8
Q11301	1	4.7	4.7	4.7
Q11301	2	3.7	3.7	3.7
Q11301	3	0	0	0
Q11301	4	1.5	1.5	1.5
Q11302	1	5.4	5.4	5.4
Q11302	2	4.4	4.4	4.4
Q11302	3	0	0	0
Q11302	4	2.2	2.2	2.2
Q11403	E	0	0	0
Q11403	C	3.7	3.7	3.7
Q11403	B	0	0	0
Q11501	1	1.1	1.1	1.1
Q11501	2	1.1	1.1	1.1
Q11501	3	10.7	10.7	10.7
Q11501	4	12.4	12.4	12.4
Q11501	5	1.1	1.1	1.1
Q11501	6	1.1	1.1	1.1
Q37001	E	5.1	5.1	5.1
Q37001	C	12.4	12.4	12.4
Q37001	B	5.7	5.7	5.7
Q37002	E	1.5	1.5	1.5
Q37002	C	5	5	5
Q37002	B	2.1	2.1	2.1
Q37003	E	1.9	1.7	1.9
Q37003	C	0	0	0
Q37003	B	1.3	1.1	1.3
QR11402	E	0	0	0
QR11402	C	0	0	0

REF No.	PIN No.	REC	PB	EE
QR11402	B	4.8	4.8	4.8
QR11501	E	0	0	0
QR11501	C	4.4	4.4	4.4
QR11501	B	0	0	0
QR11502	E	0	0	0
QR11502	C	0	0	0
QR11502	B	4.7	4.7	4.7
QR45006	E	0	0	0
QR45006	C	0	0	0
QR45006	B	4.8	4.8	4.8
QR45007	E	0	0	0
QR45007	C	5.8	5.8	5.8
QR45007	B	0	0	0
QR45008	E	0	0	0
QR45008	C	5.8	5.8	5.8
QR45008	B	0	0	0
QR45009	E	0	0	0
QR45009	C	0	0	0
QR45009	B	2.3	2.6	2.3

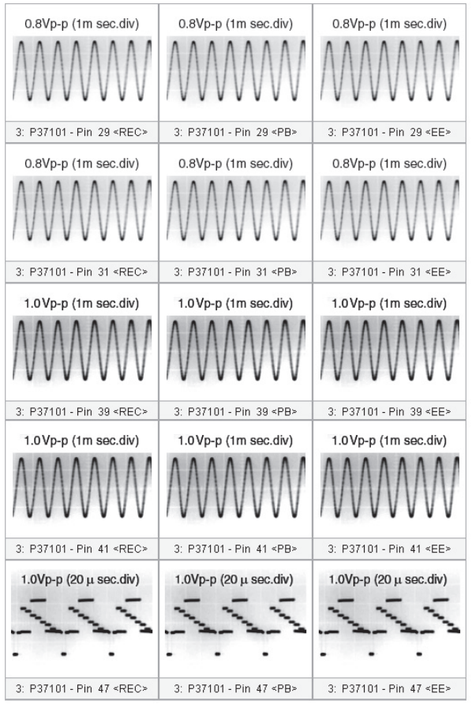
<IC11201>

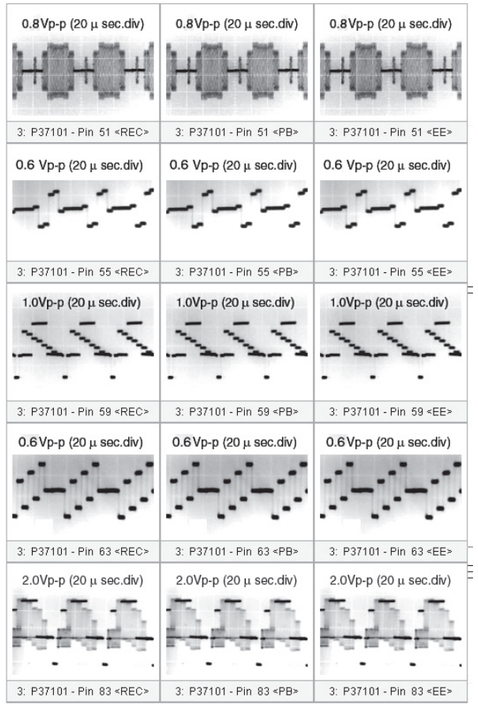


<IC11202>



<P37101>





S2.3. Front Jack P.C.B.

REF No.	PIN No.	REC	PB	EE
IC7801	1	4.9	4.9	4.9
IC7801	2	0	0	0
IC7801	3	4.9	4.9	4.9

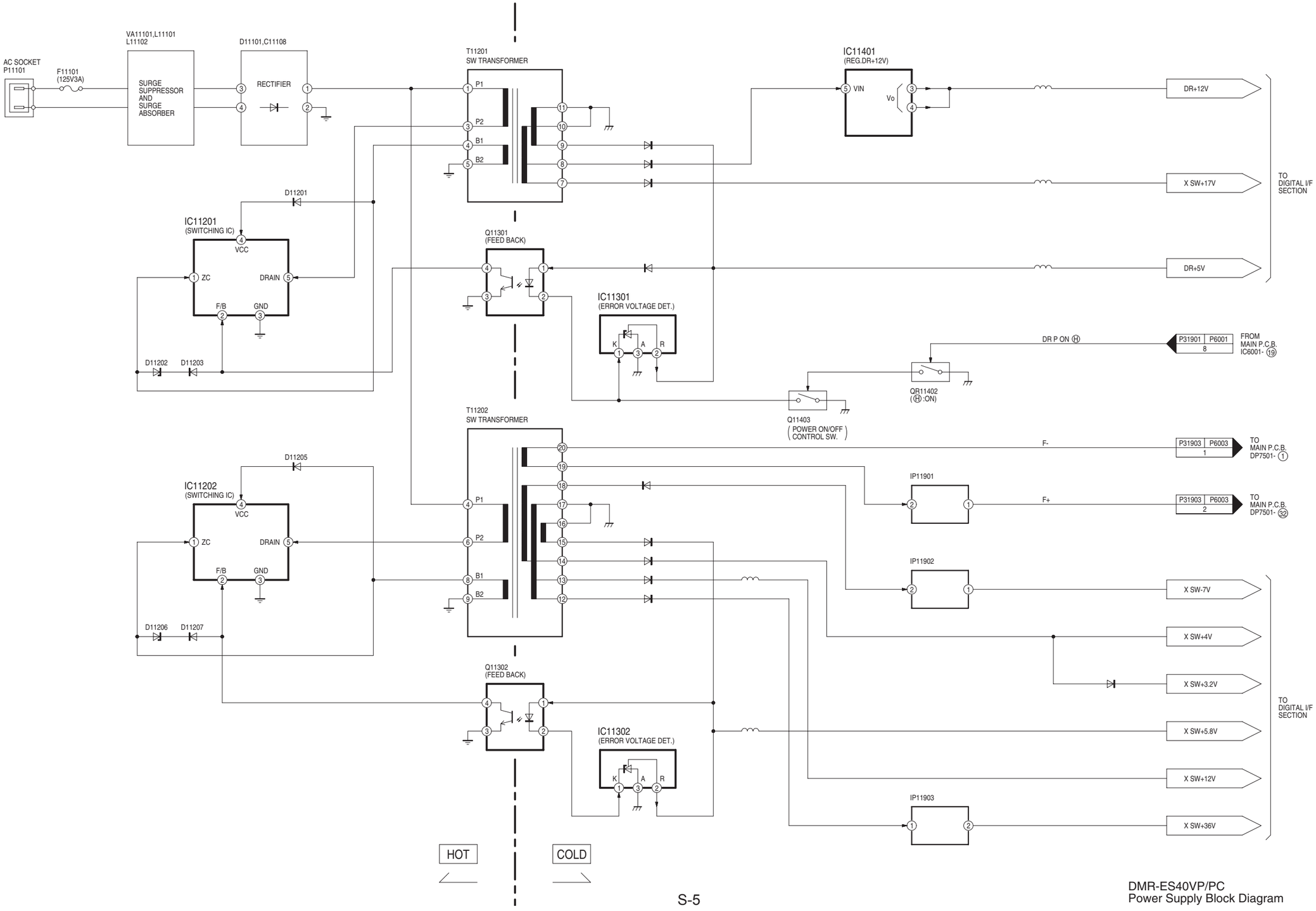
S2.4. FL Drive P.C.B.

REF No.	PIN No.	REC	PB	EE
QR27501	E	0	0	0
QR27501	C	3.9	3.9	3.9
QR27501	B	0	0	0
QR27503	E	0	0	0
QR27503	C	0	0	0
QR27503	B	4.8	4.8	4.8
QR27505	E	0	0	0
QR27505	C	3.6	3.6	3.6
QR27505	B	0	0	0

REF No.	PIN No.	REC	PB	EE
QR27501	E	0	0	0
QR27501	C	3.9	3.9	3.9
QR27501	B	0	0	0
QR27503	E	0	0	0
QR27503	C	0	0	0
QR27503	B	4.8	4.8	4.8
QR27505	E	0	0	0
QR27505	C	3.6	3.6	3.6
QR27505	B	0	0	0

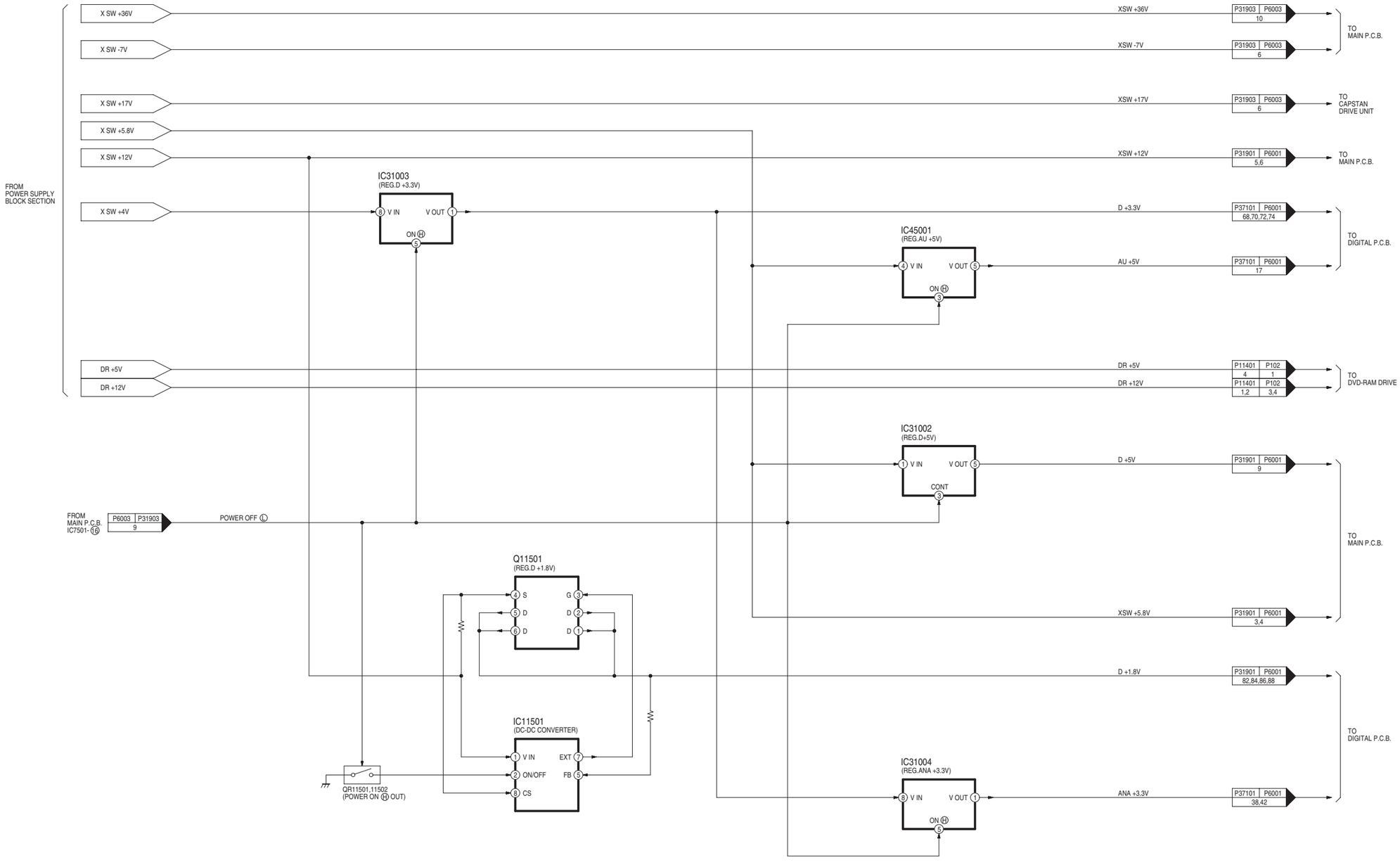
S3. Power Supply Block

S3.1. Power Supply Block Diagram



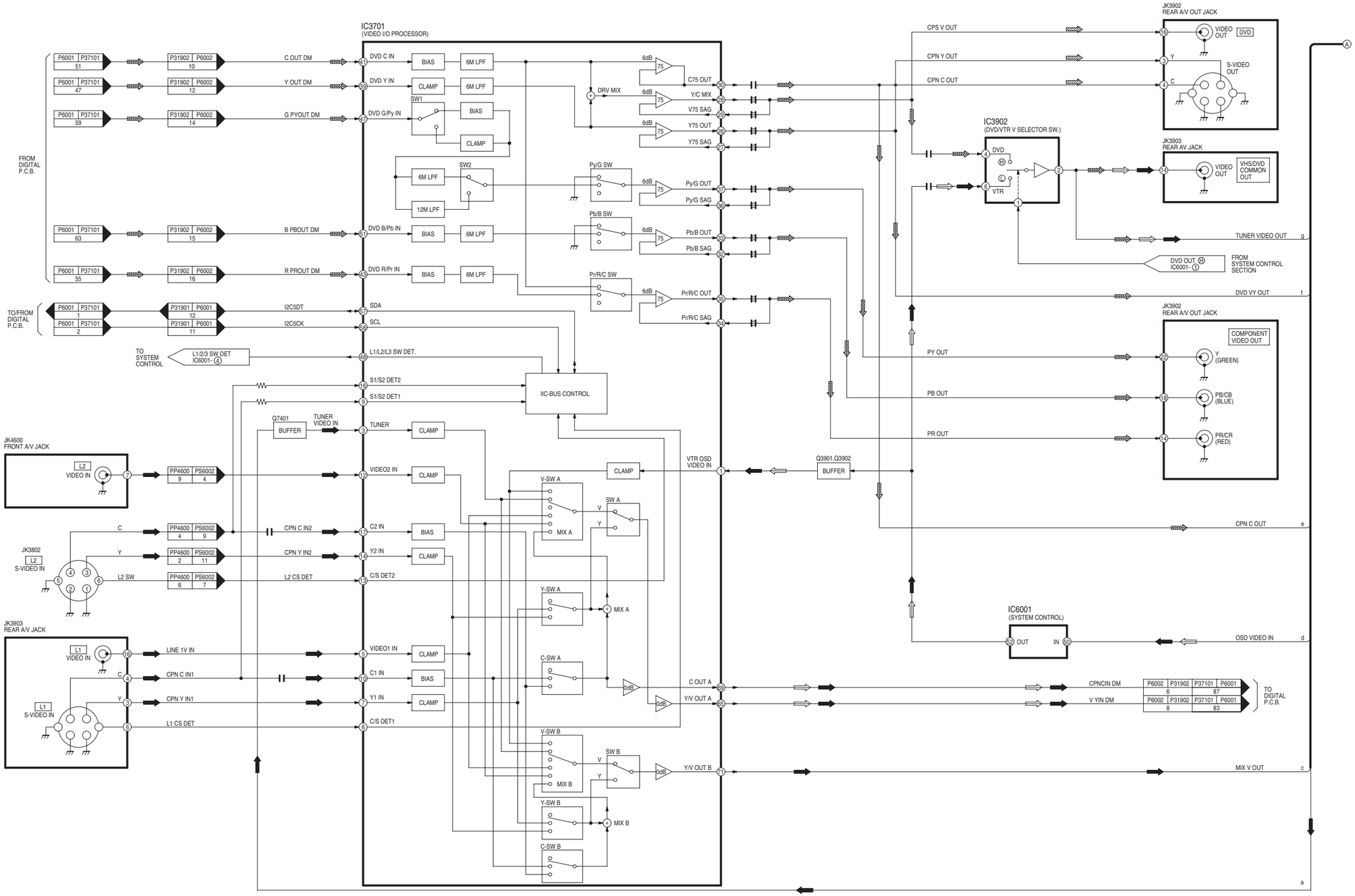
DMR-ES40VP/PC
Power Supply Block Diagram

S3.2. Digital I/F Regulator Block Diagram



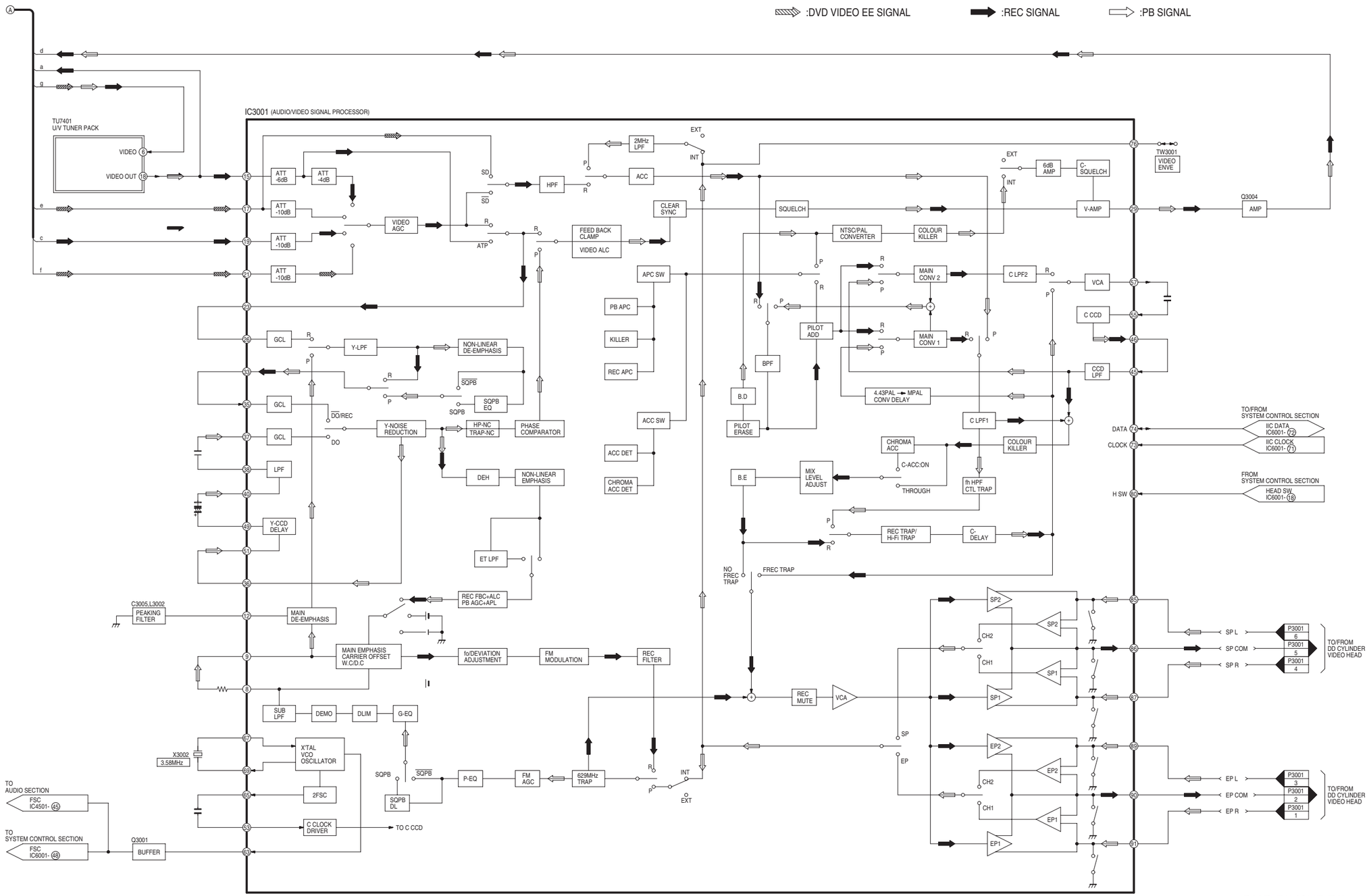
DMR-ES40VP/PC
Digital I/F Regulator
Block Diagram

S3.3. Video Block Diagram(1)



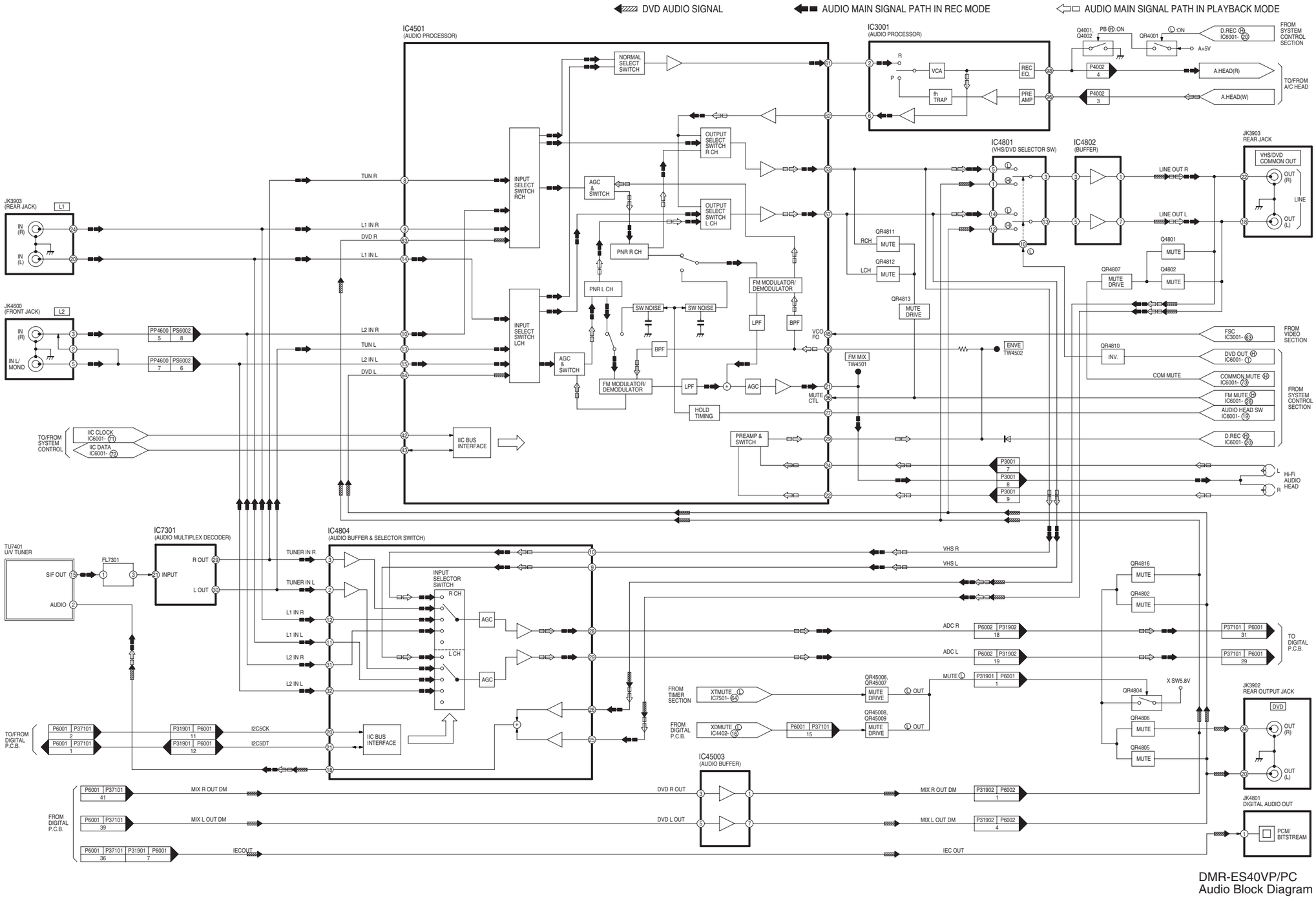
DMR-ES40VP/PC
Video Block Diagram

S3.4. Video Block Diagram(2)



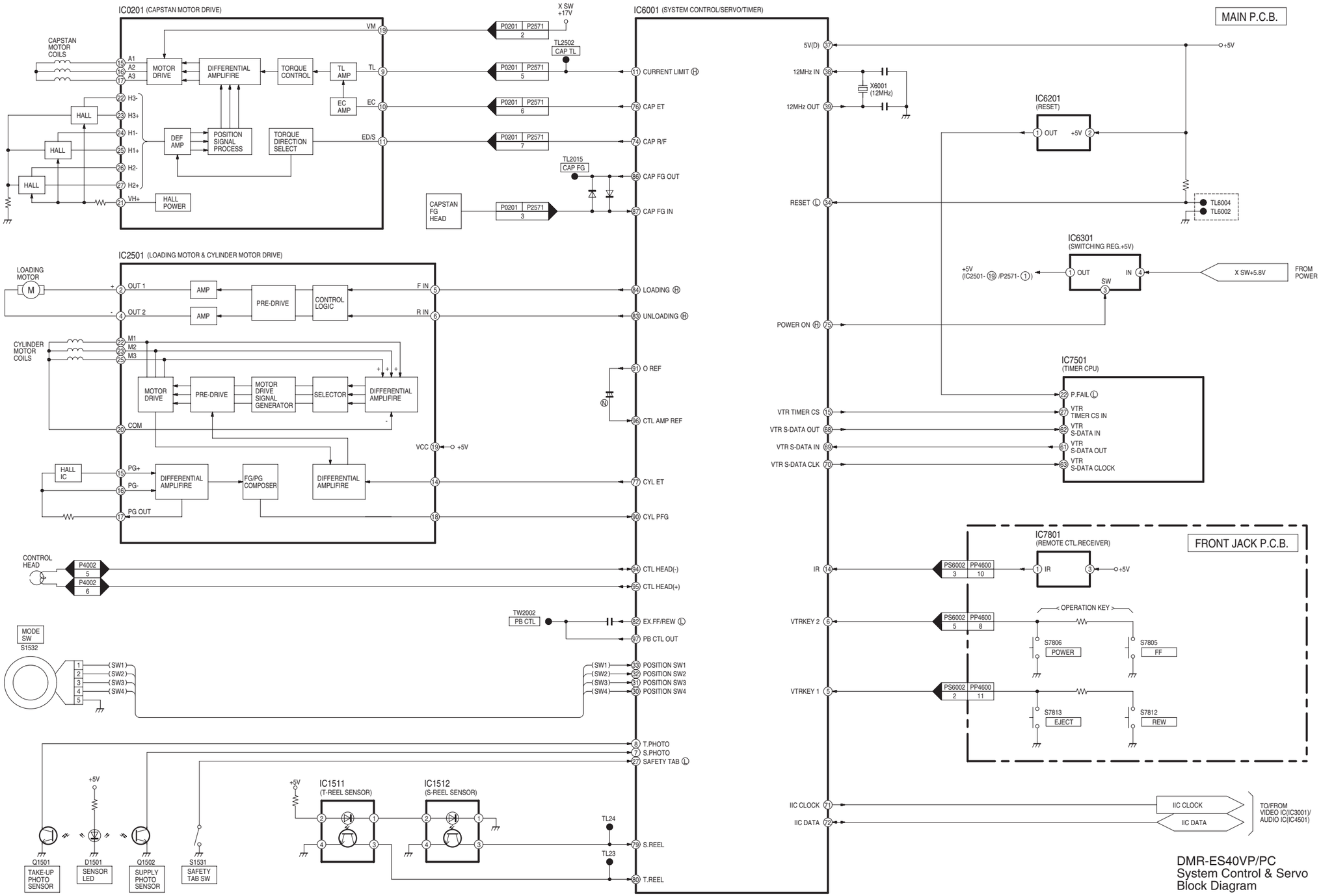
DMR-ES40VP/PC
Video Block Diagram

S3.5. Audio Block Diagram



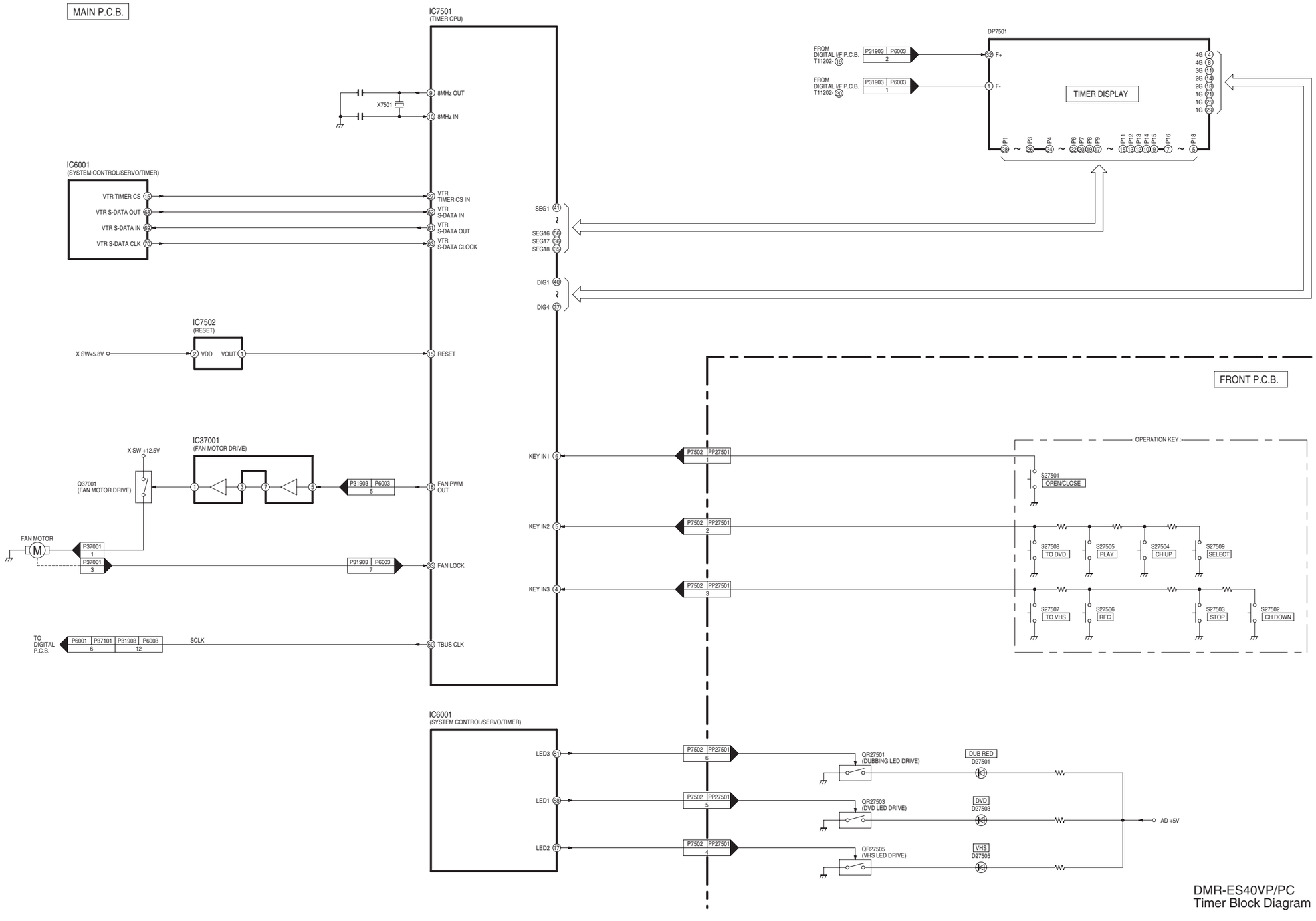
DMR-ES40VP/PC
Audio Block Diagram

S3.6. System Control and Servo Block Diagram



DMR-ES40VP/PC
System Control & Servo
Block Diagram

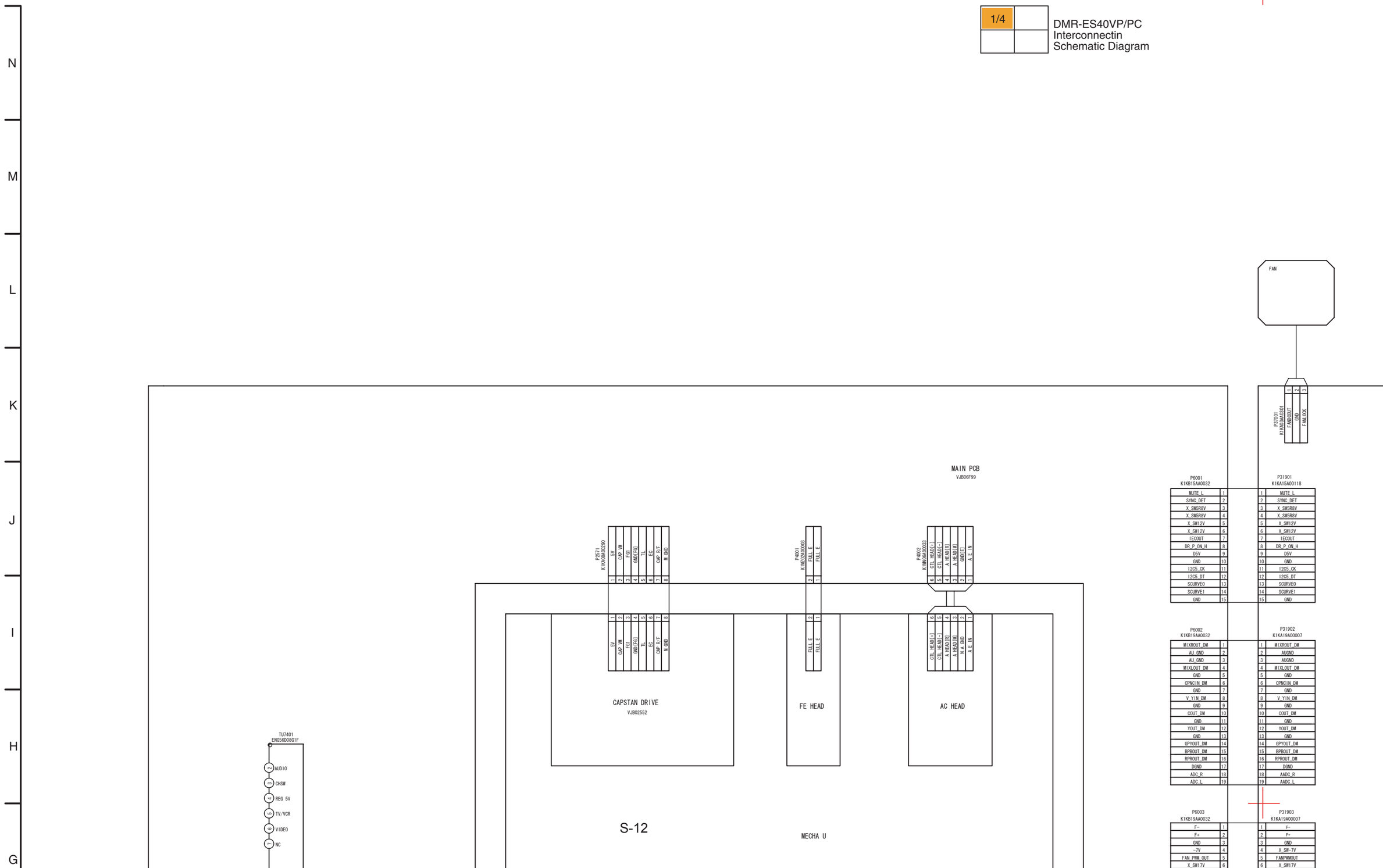
S3.7. Timer Block Diagram



DMR-ES40VP/PC
Timer Block Diagram

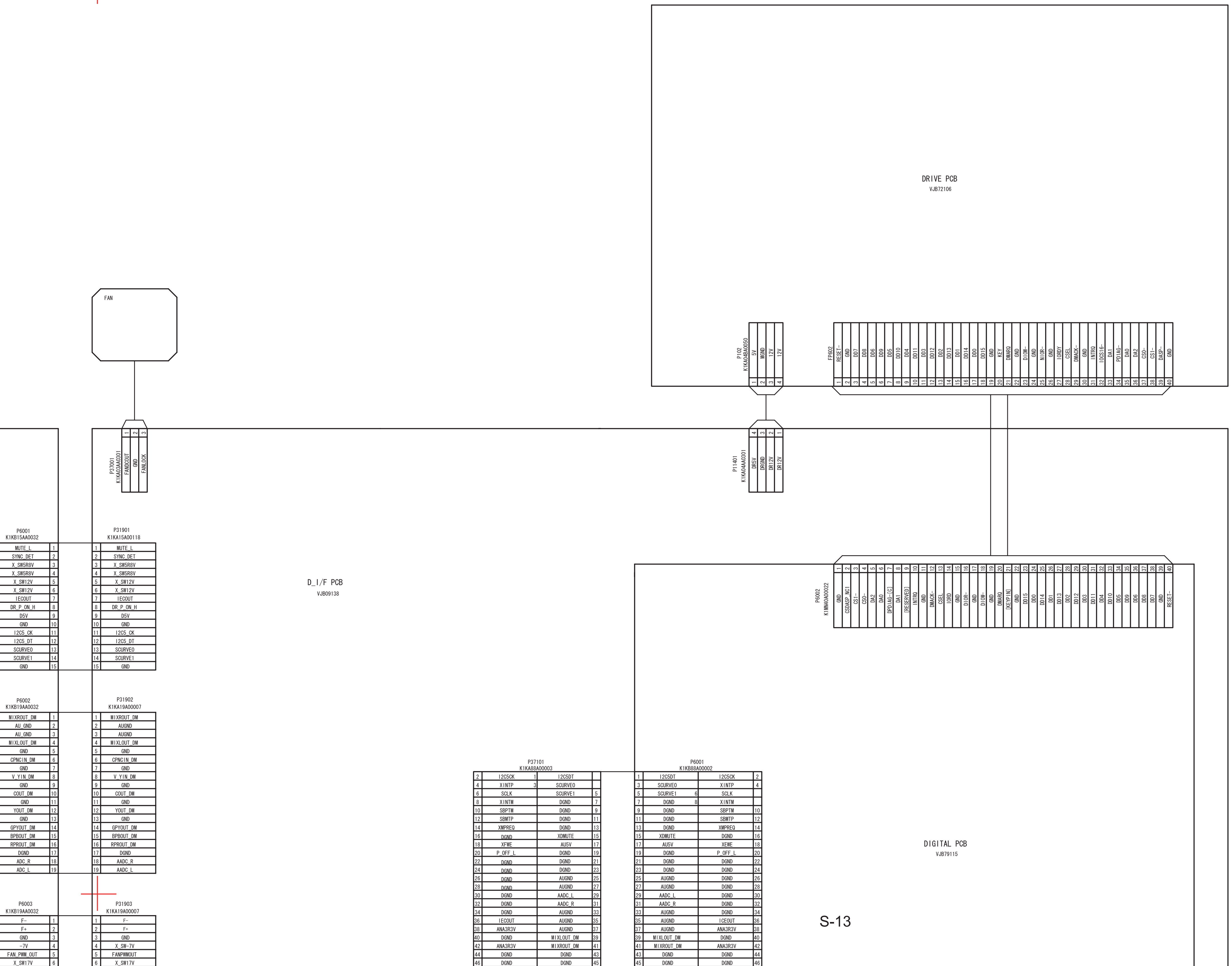
S4. Schematic Diagram

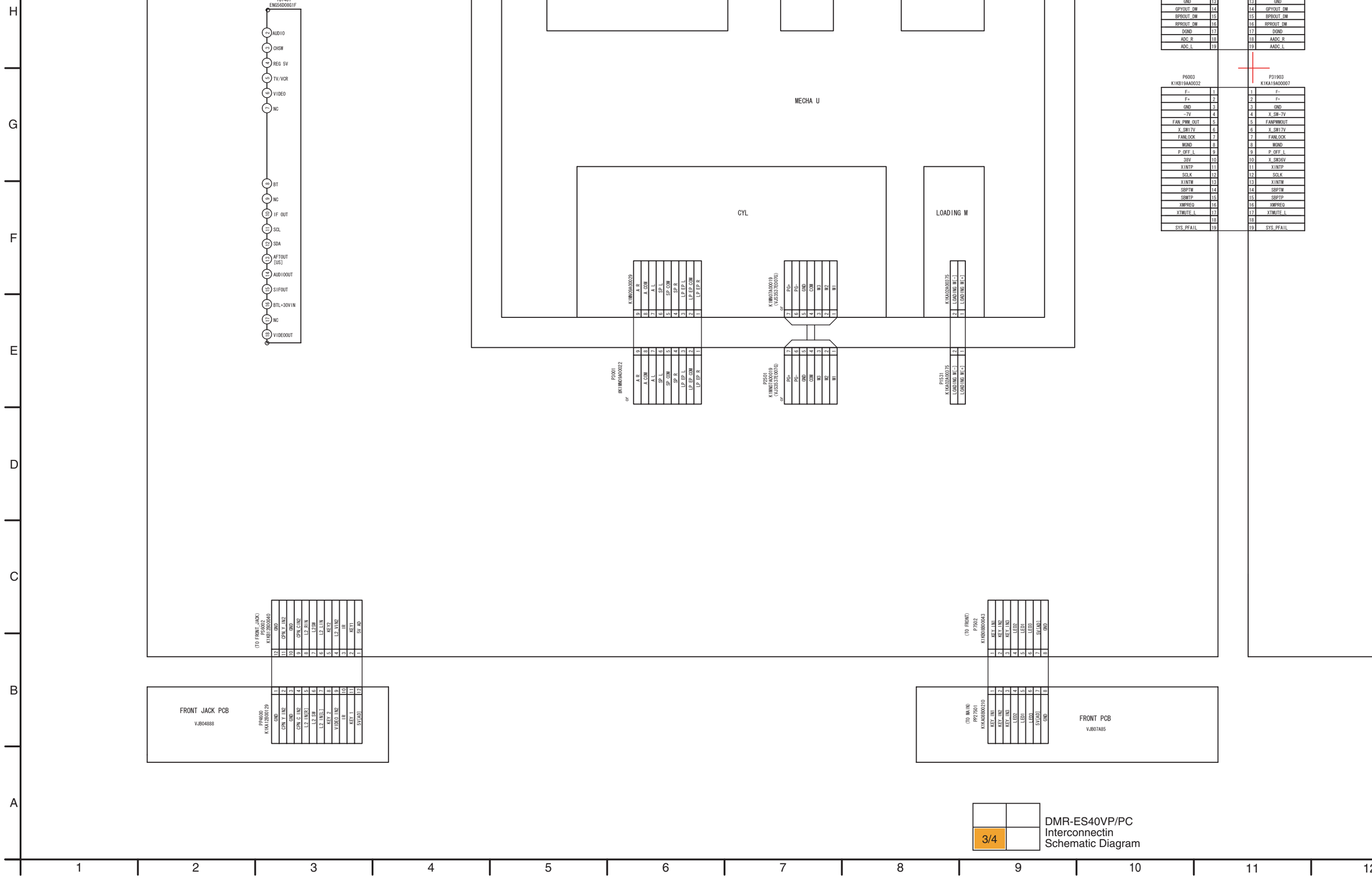
S4.1. Interconnection Diagram



2/4

DMR-ES40VP/PC
Interconnectin
Schematic Diagram




P5001
EN25D0861F
AUDIO
CHSW
REG 5V
TV/VCR
VIDEO
NC
BT
NC
IF OUT
SCL
SDA
AFTOUT [US]
AUDIOOUT
SIFOUT
BTL+30VIN
NC
VIDEOOUT
MECHA U
CYL
LOADING M
P3001 (K1MM09A00022) or P2501 K1MN07A00019 (VJS353TE0076)
K1MM09A00029
K1MN07A00019 (VJS353TE0076)
K1KA05A00375
P1531 K1KA05A00375
P6003 K1KB19AA0032
P31903 K1KA19A00007
P6002 (TO FRONT JACK) K1KB128V0040
PP4600 K1KA128V0129
FRONT JACK PCB
VJB04888
P7502 (TO FRONT) K1KB08B00043
P7501 (TO MAIN) K1KA08B00310
FRONT PCB
VJB07A85
DMR-ES40VP/PC
Interconnectin
Schematic Diagram
3/4

P6003 K1KB19AA0032		P31903 K1KA19A00007	
F−	1	1	F−
F+	2	2	F+
GND	3	3	GND
−7V	4	4	X_SW−7V
FAN_PWM_OUT	5	5	FANPWMOUT
X_SW17V	6	6	X_SW17V
FANLOCK	7	7	FANLOCK
MGND	8	8	MGND
P_OFF_L	9	9	P_OFF_L
_38V	10	10	X_SW36V
XINTP	11	11	XINTP
SCLK	12	12	SCLK
XINTM	13	13	XINTM
SBPTM	14	14	SBPTM
SBMTP	15	15	SBPTP
XMPREQ	16	16	XMPREQ
XTMUTE_L	17	17	XTMUTE_L
	18	18	
SYS_PFAIL	19	19	SYS_PFAIL

GND	13	13	GND
GPYOUT_DM	14	14	GPYOUT_DM
BPBOUT_DM	15	15	BPBOUT_DM
RPROUT_DM	16	16	RPROUT_DM
DGND	17	17	DGND
ADC_R	18	18	AADC_R
ADC_L	19	19	AADC_L

12	SBMTP	DGND	11
14	XMPREQ	DGND	13
16	DGND	XDMUTE	15
18	XFWE	AUSV	17
20	P_OFF_L	DGND	19
22	DGND	DGND	21
24	DGND	DGND	23
26	DGND	AUGND	25
28	DGND	AUGND	27
30	DGND	AADC_L	29
32	DGND	AADC_R	31
34	DGND	AUGND	33
36	IECOUT	AUGND	35
38	ANA3R3V	AUGND	37
40	DGND	MIXLOUT_DM	39
42	ANA3R3V	MIXROUT_DM	41
44	DGND	DGND	43
46	DGND	DGND	45
48	ANA5V	YOUT_DM	47
50	DGND	DGND	49
52	DSV	COUT_DM	51
54	CHSEL	DGND	53
56	X_SW_3R2V	RPROUT_DM	55
58	X_SW_3R2V	DGND	57
60	DGND	GPYOUT_DM	59
62	DGND	DGND	61
64	DGND	BPBOUT_DM	63
66	CONV_TU	DGND	65
68	D3R3V	DGND	67
70	D3R3V	DGND	69
72	D3R3V	DGND	71
74	D3R3V	DGND	73
76	DGND	DGND	75
78	SYNC_DET	DGND	77
80	DGND	DGND	79
82	D1R8V	DGND	81
84	D1R8V	V_YIN_DM	83
86	D1R8V	DGND	85
88	D1R8V	CPNCIN_DM	87

11	SBMTP	DGND	12
13	DGND	XMPREQ	14
15	XDMUTE	DGND	16
17	AUSV	XFWE	18
19	DGND	P_OFF_L	20
21	DGND	DGND	22
23	DGND	DGND	24
25	AUGND	DGND	26
27	AUGND	DGND	28
29	AADC_L	DGND	30
31	AADC_R	DGND	32
33	AUGND	DGND	34
35	AUGND	ICEOUT	36
37	AUGND	ANA3R3V	38
39	MIXLOUT_DM	DGND	40
41	MIXROUT_DM	ANA3R3V	42
43	DGND	DGND	44
45	DGND	DGND	46
47	YOUT_DM	ANA5V	48
49	DGND	DGND	50
51	COUT_DM	DSV	52
53	DGND	CHSEL	54
55	RPROUT_DM	X_SW3R2V	56
57	DGND	X_SW3R2V	58
59	GPYOUT_DM	DGND	60
61	DGND	DGND	62
63	BPYOUT_DM	DGND	64
65	DGND	CONV_TU	66
67	DGND	D3R3V	68
69	DGND	D3R3V	70
71	DGND	D3R3V	72
73	DGND	D3R3V	74
75	DGND	DGND	76
77	DGND	CSYNC_DET	78
79	DGND	DGND	80
81	DGND	D1R8V	82
83	V_YIN_DM	D1R8V	84
85	DGND	D1R8V	86
87	CPNCIN_DM	D1R8V	88

DIGITAL PCB
VJB79115

P6005

1	2	3	4	5
TPA+	TPA−	GND	TPB+	TPB−

DV JACK
VJB001K8

P66801
K1KA05B42061

1	2	3	4	5
TPA+	TPA−	GND	TPB+	TPB−

P66802
K2HC104B00015

1	2	3	4
TPA−	TPA+	TPB−	TPB+

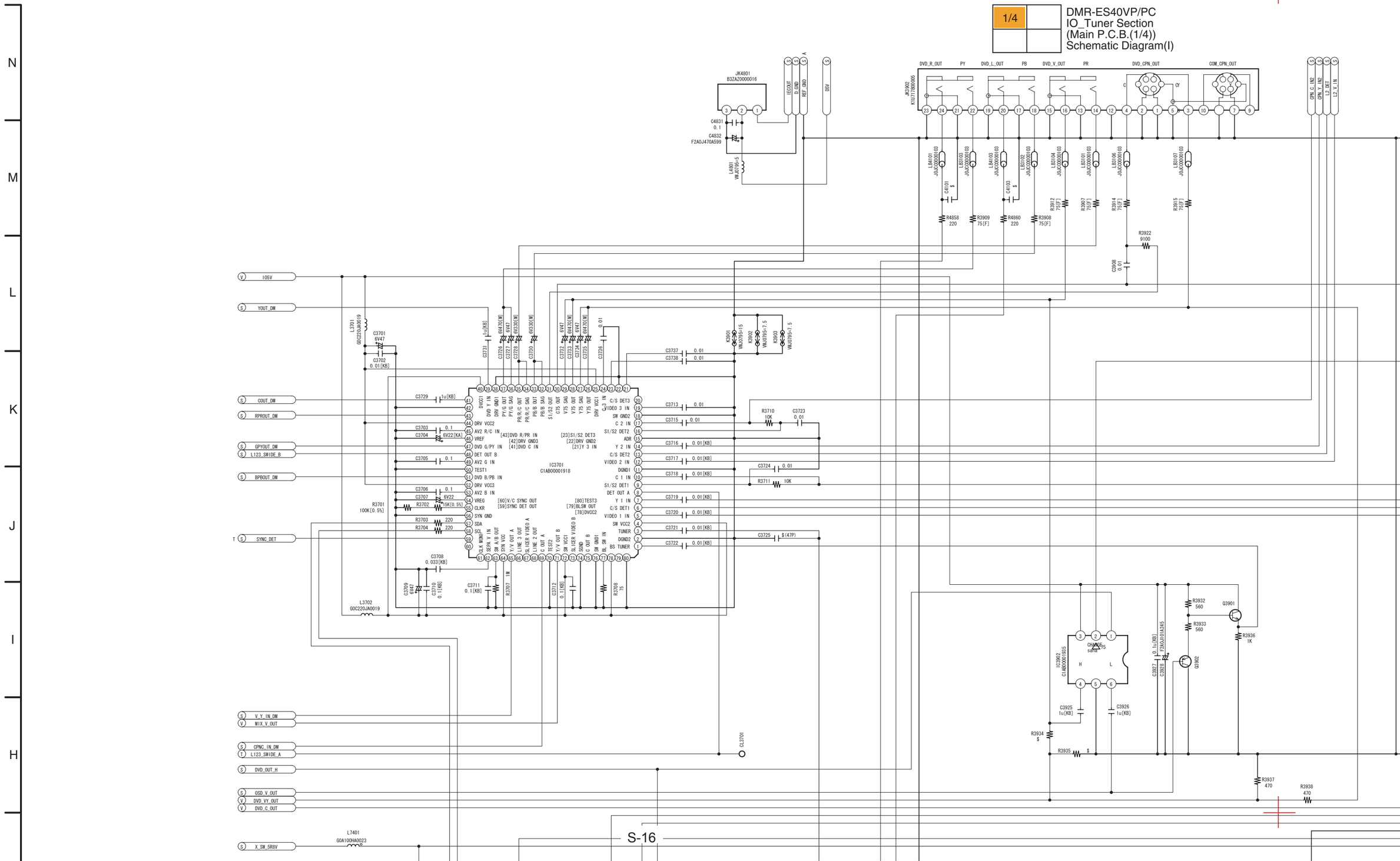
DMR-ES40VP/PC
Interconnectin
Schematic Diagram
4/4

11 12 13 14 15 16 17 18 19 20 21

S4.2. IO_Tuner(I) Schematic Diagram

1/4

DMR-ES40VP/PC
IO_Tuner Section
(Main P.C.B.(1/4))
Schematic Diagram(I)



COM_CPN_OUT

CPN_C_IN2
CPN_Y_IN2
L2_DET
L2_V_IN

DVD_POFF_L
UMREG_28V

LINE IN1[R]
COM ROUT
LINE IN1[L]
COM LOUT
CPS L1 IN
COM VOUT
CPN L1 IN

K3903
K1UT18B00003

LB4105 JOJJC20000103
LB4102 JOJJC20000103
LB4107 JOJJC20000103
LB4104 JOJJC20000103
LB5104 JOJJC20000103
LB5103 JOJJC20000103
LB5106 JOJJC20000103
LB5110 JOJJC20000103
LB5111 JOJJC20000103

C4105 $
C4107 $
C4102 $
C4109 $
C4111 $
C4104 $

R4862 100K
R4863 100K
R4859 470
R4861 470
R3924 75
R3926 1K
R3913 68
C3923 F2A0J471A247

C3918 0.1
R3928 75
R3929 75
C3919 0.01

QR7401 UNR511200L
R7416 100K
Q7402 2SD1819AQL

QR4801 $[UNR511300L]

C4827 VWJ0795=5 (16V10)
R4840 0
QR4803 $[UNR52160QL]
C7437 $
K7410 VWJ0795=17.5
C7432 0.01[KB]
LB7403 JOJBC0000015

LB7405 ERJ3GEY0R00V
R7403 2200
IC7401 0CBB8B300004
R7405 1K
R7406 15K
C7438 $
C7403 0.1[KB]
R7407 13K
R7408 2200
C7404 6V47
R7404 $(US)
R7409 $(US)

C7433 0.01[KB]
LB7409 JOJBC0000015
LB7410 JOJBC0000015
LB7411 JOJBC0000015
LB7412 JOJBC0000015
C7434 $
L7402 VWJ0795=5

TU7401 ENG56D08G1F

A_GND
SCURVE_0
SCURVE_1
CH_SW
TUN_V_IN1
TV_VCR

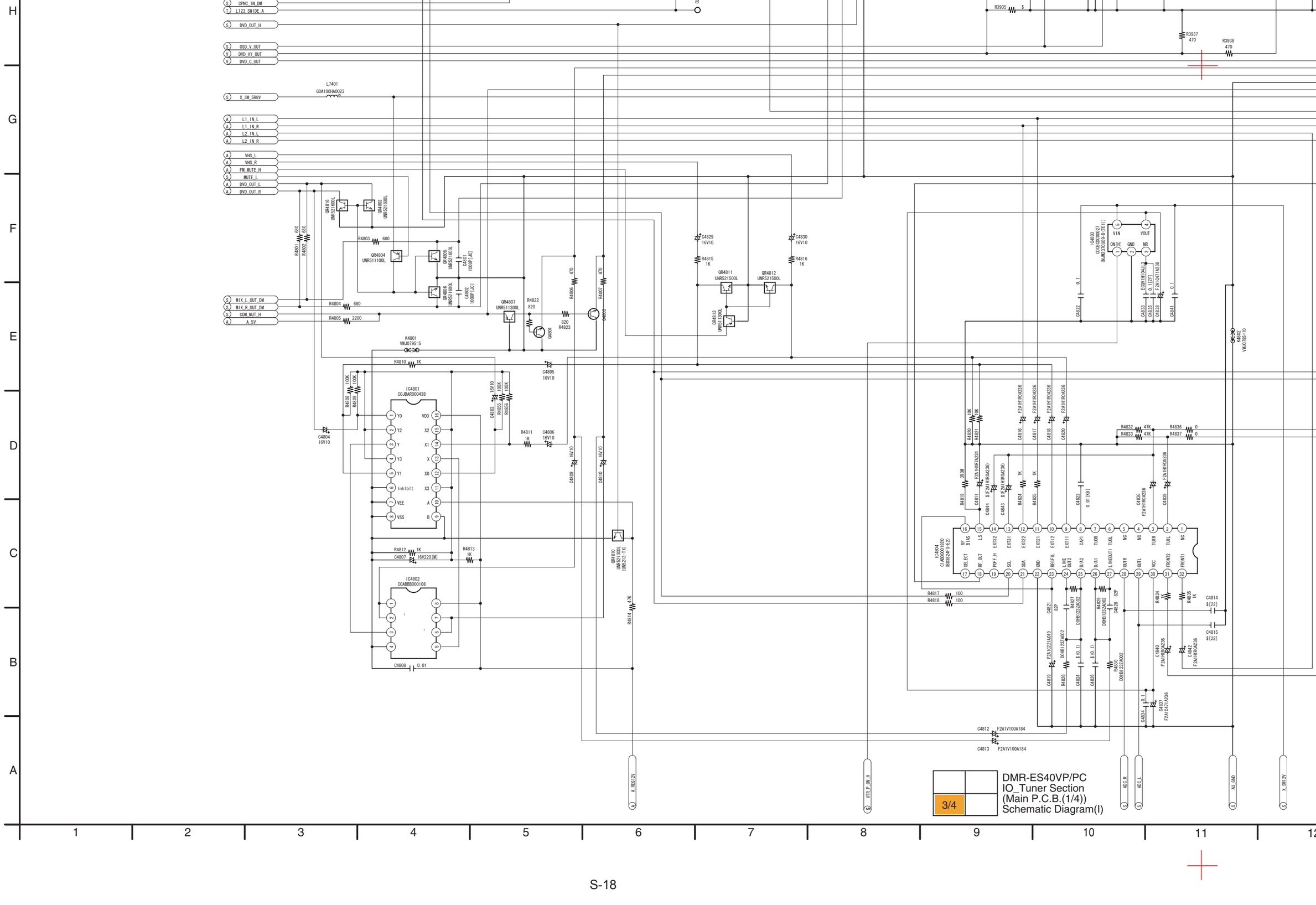
AUDIO
CHSW
REG 5V
TV/VCR
VIDEO
NC
BT
NC
IF OUT
SCL
SDA
AFTOUT [US]
AUDIOOUT
SIFOUT
BTL+30VIN
NC
VIDEOOUT

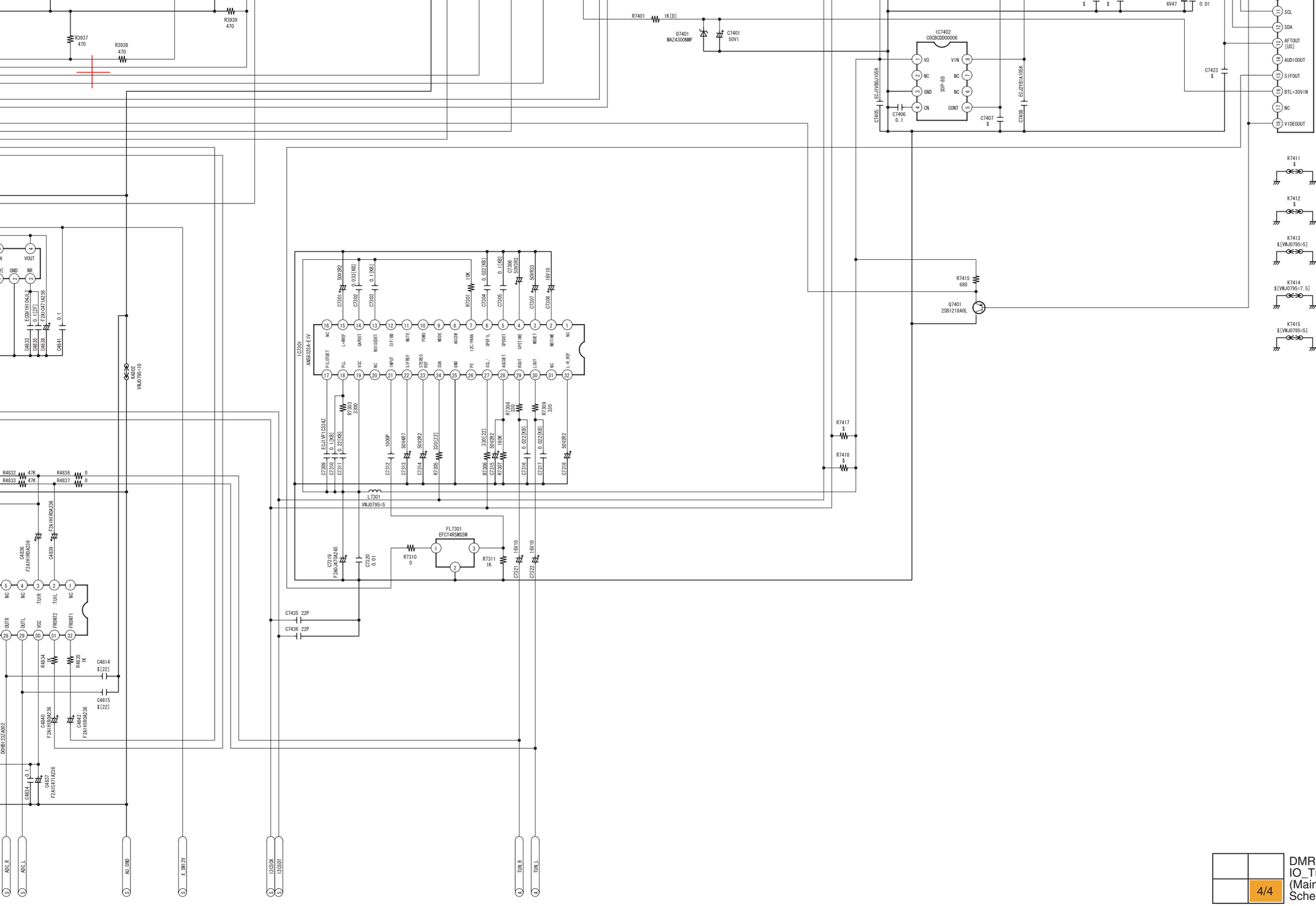
R7410 0[22]
R7411 0[22]
LB7407 ERJ3GEY0R00V
LB7403 ERJ3GEY0R00V
C7419 $
C7420 $
C7421 6V47
C7422 0.01
C7423 $

R7401 1K[D]
D7401 MAZ4300NMF
C7401 50V1

IC7402 C0CBCD00006
SOP-8D
VO
NC
GND
CN
VIN
NC
NC
CONT
C7405 F2J1YB01105K
C7406 0.1
C7407 $
C7408 F2J2YB14105K

Q3901
R3932 560
R3933 560
R3936 1K
Q3902
C3922 0.01
R3940 470
R3939 470
R3937 470
R3938 470


DMR-ES40VP/PC
IO_Tuner Section
(Main P.C.B.(1/4))
Schematic Diagram(I)
3/4

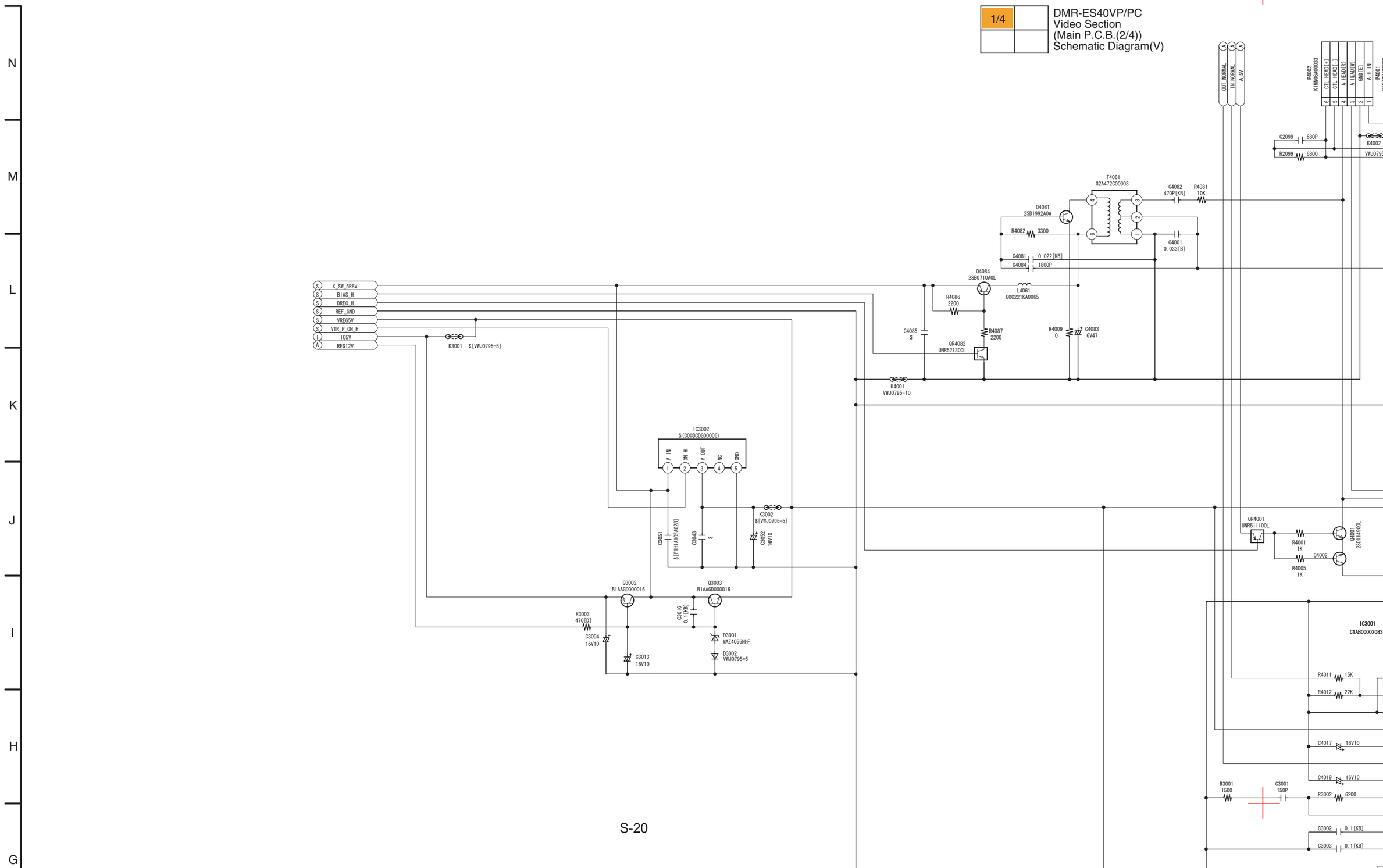


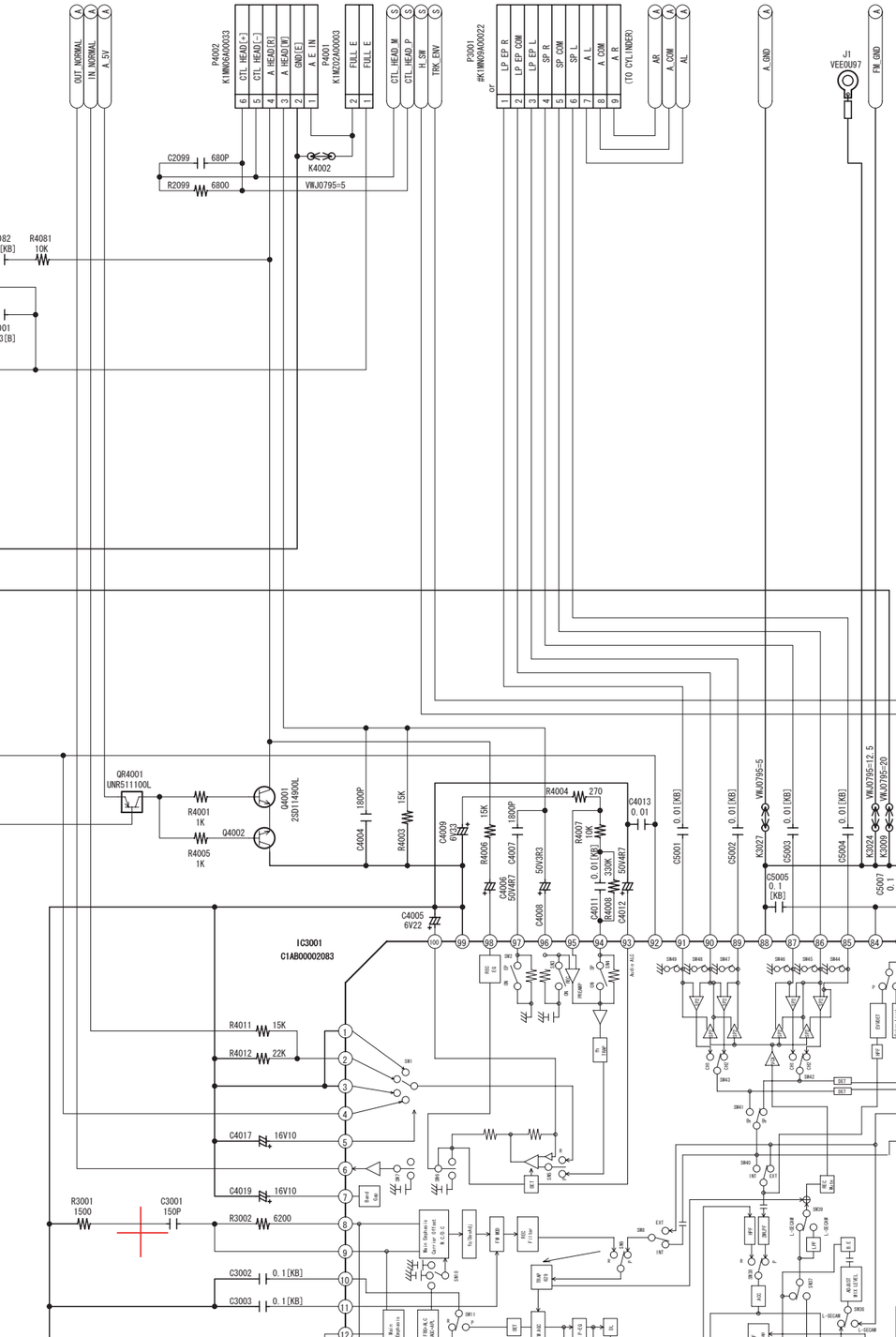
DMR-ES40VP/PC
IO_Tuner Section
(Main P.C.B.(1/4))
Schematic Diagram(I)

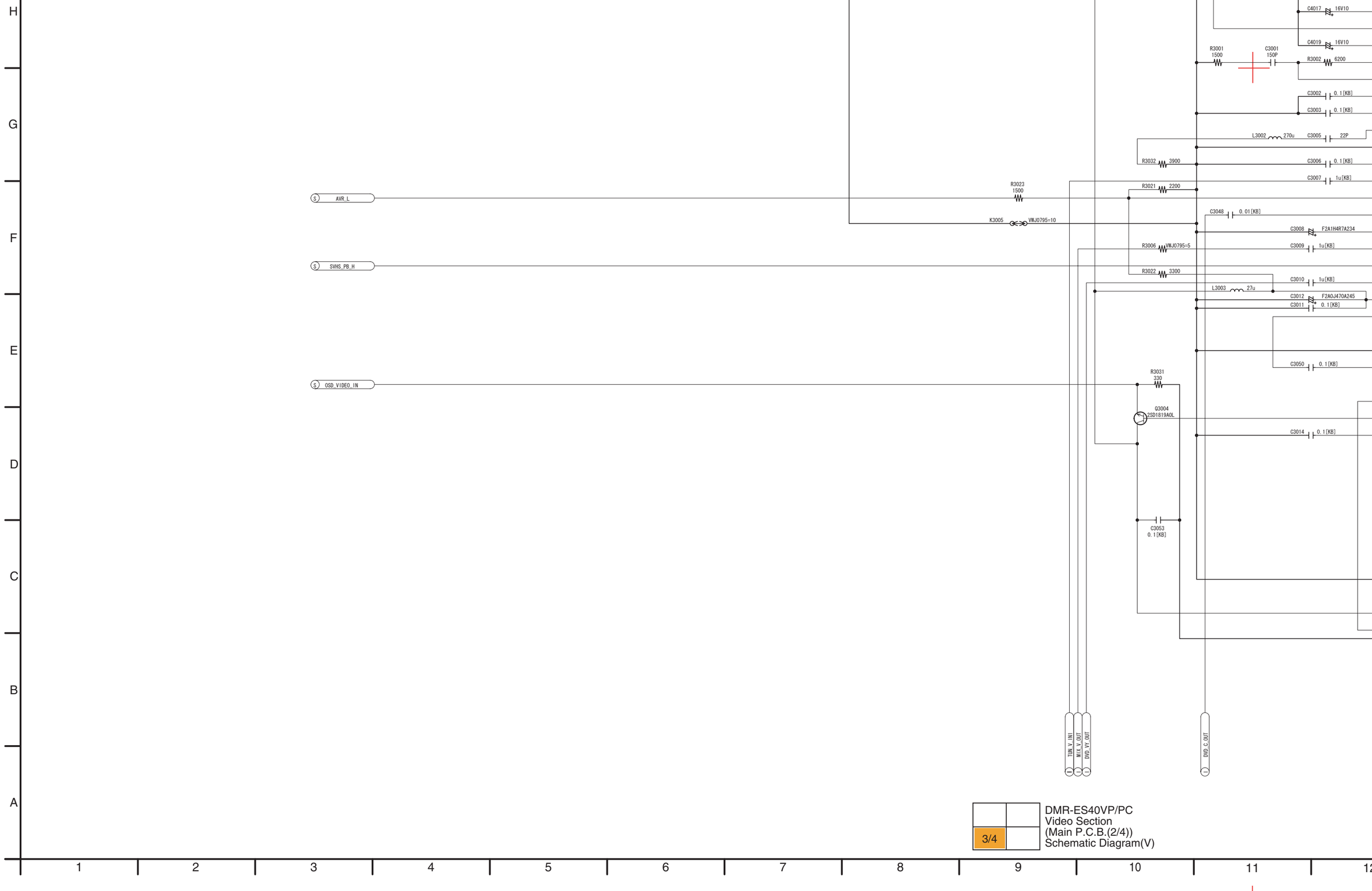
4/4

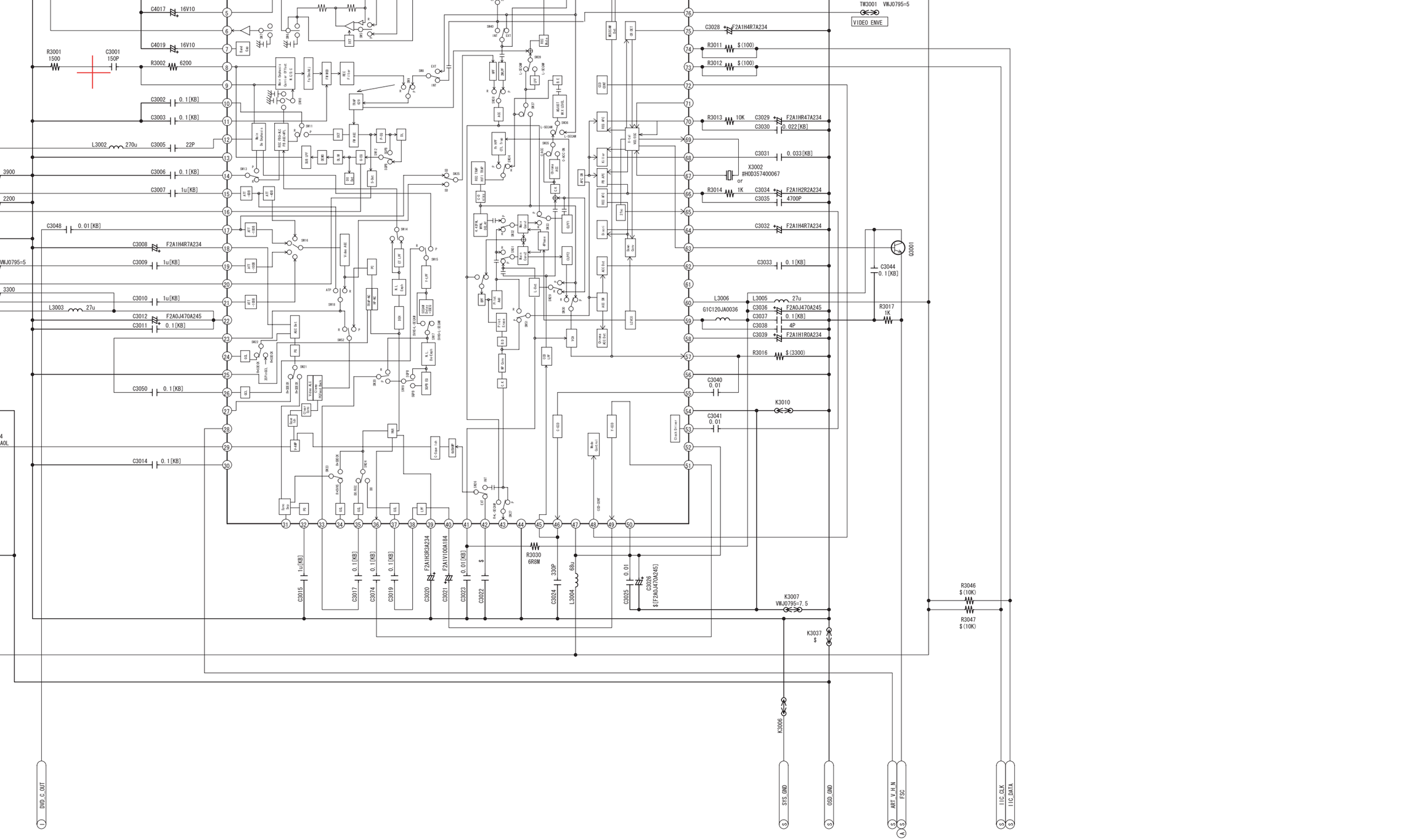
11 12 13 14 15 16 17 18 19 20 21

S4.3. Video(V) Schematic Diagram




OUT NORMAL
IN NORMAL
A_5V
P4002
K1MN06A00033
CTL HEAD(+)
CTL HEAD(-)
A HEAD(R)
A HEAD(M)
GND(E)
A E IN
P4001
K1MZ02A00003
FULL E
FULL E
CTL HEAD M
CTL HEAD P
H SW
TRK ENV
P3001
#K1MN09A00022
or
LP EP R
LP EP COM
LP EP L
SP R
SP COM
SP L
A L
A COM
A R
(TO CYLINDER)
AR
A COM
AL
A GND
J1
VEE0U97
FW GND
C2099 680P
R2099 6800
K4002
VWJ0795=5
R4081
10K
QR4001
UNR511100L
Q4001
2SD1149QOL
R4001
1K
Q4002
R4005
1K
C4004 1800P
R4003 15K
C4009
6V33
R4006 15K
C4006
50V487
C4007 1800P
50V0R3
R4004 270
C4013
0.01
R4007
10K
C4011 0.01[KB]
R4008 330K
50V487
C4012
C5001 0.01[KB]
C5002 0.01[KB]
K3027
VWJ0795=5
C5003 0.01[KB]
C5004 0.01[KB]
K3024
K3009
VWJ0795=12.5
VWJ0795=20
C5007
0.1
C5005
0.1
[KB]
C5006
F2A0J101A245
L5001 68u
C5008
1u[KB]
C4005
6V22
IC3001
C1AB00002083
R3035
2200
R3009 15K
R4011 15K
R4012 22K
C4017 16V10
C4019 16V10
R3001
1500
C3001
150P
R3002 6200
C3002 0.1[KB]
C3003 0.1[KB]
FM_MUT
TW3001 VWJ0795=5
VIDEO ENVE
C3028 F2A1H4R7A234
R3011 $(100)
R3012 $(100)
R3013 10K
C3029 F2A1HR47A234
C3030 0.022[KB]
S-21


AVR_L
SVHS_PB_H
OSD_VIDEO_IN
R3023 1500
K3005 VWJ0795=10
R3001 1500
C3001 150P
R3002 6200
C4017 16V10
C4019 16V10
C3002 0.1[KB]
C3003 0.1[KB]
L3002 270u
C3005 22P
R3032 3900
C3006 0.1[KB]
C3007 1u[KB]
R3021 2200
C3048 0.01[KB]
C3008 F2A1H4R7A234
R3006 VWJ0795=5
C3009 1u[KB]
R3022 3300
C3010 1u[KB]
L3003 27u
C3012 F2A0J470A245
C3011 0.1[KB]
C3050 0.1[KB]
R3031 330
Q3004 2SD1819AOL
C3014 0.1[KB]
C3053 0.1[KB]
TUN_V_IN1
MIX_V_OUT
DVD_VY_OUT
DVD_C_OUT
DMR-ES40VP/PC
Video Section
(Main P.C.B.(2/4))
Schematic Diagram(V)
3/4

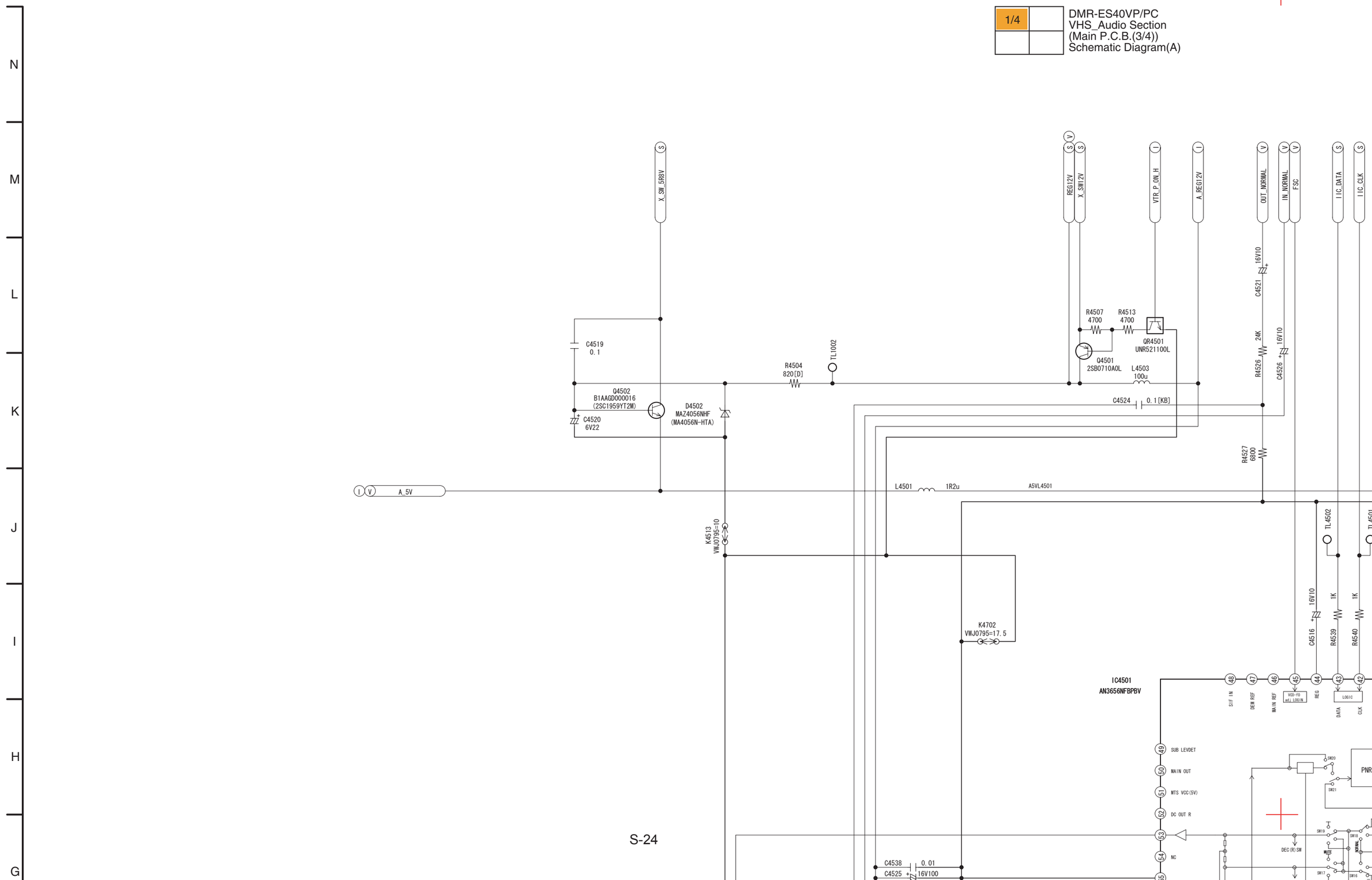


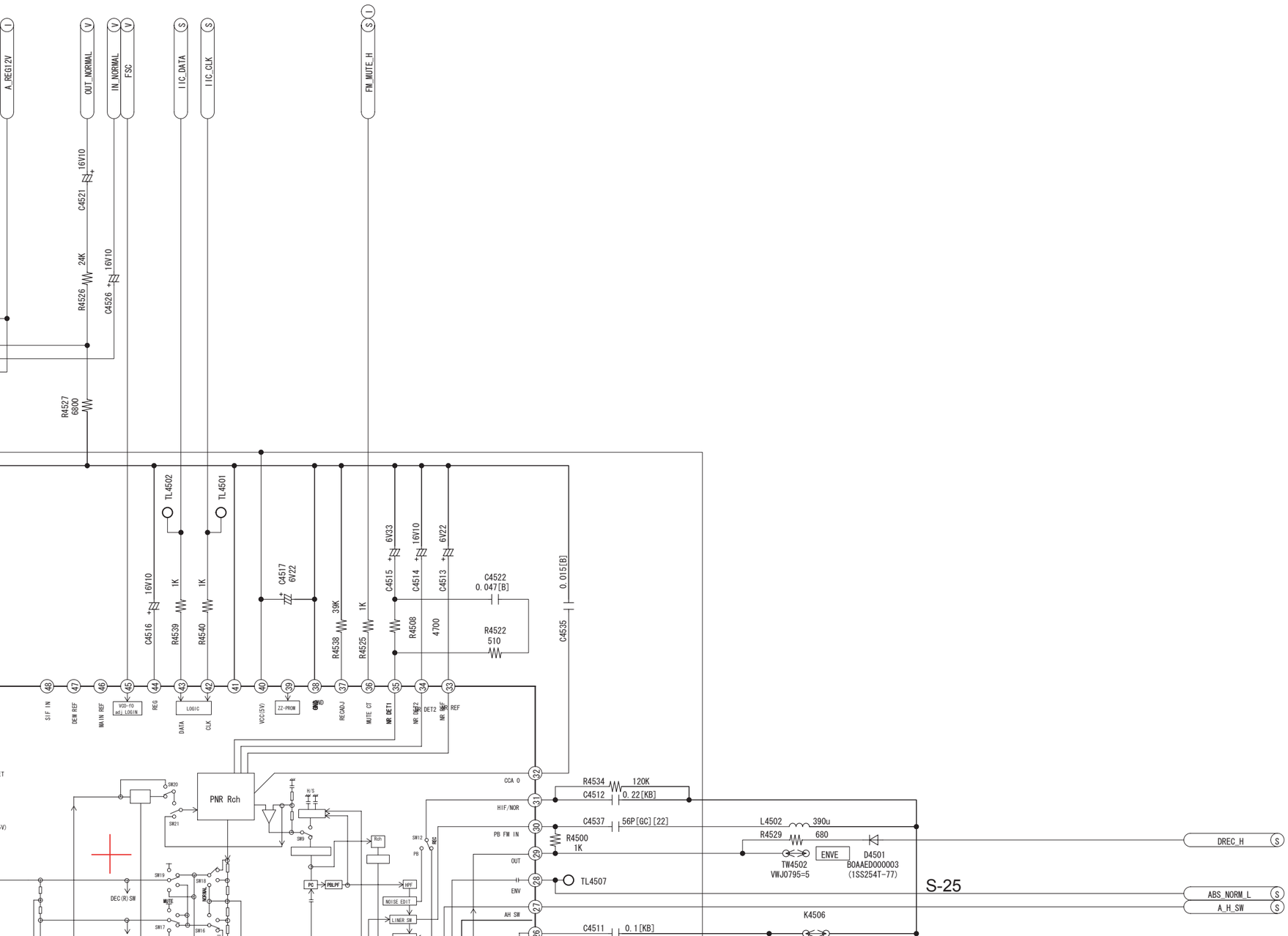
DMR-ES40VP/PC
Video Section
(Main P.C.B.(2/4))
Schematic Diagram(V)

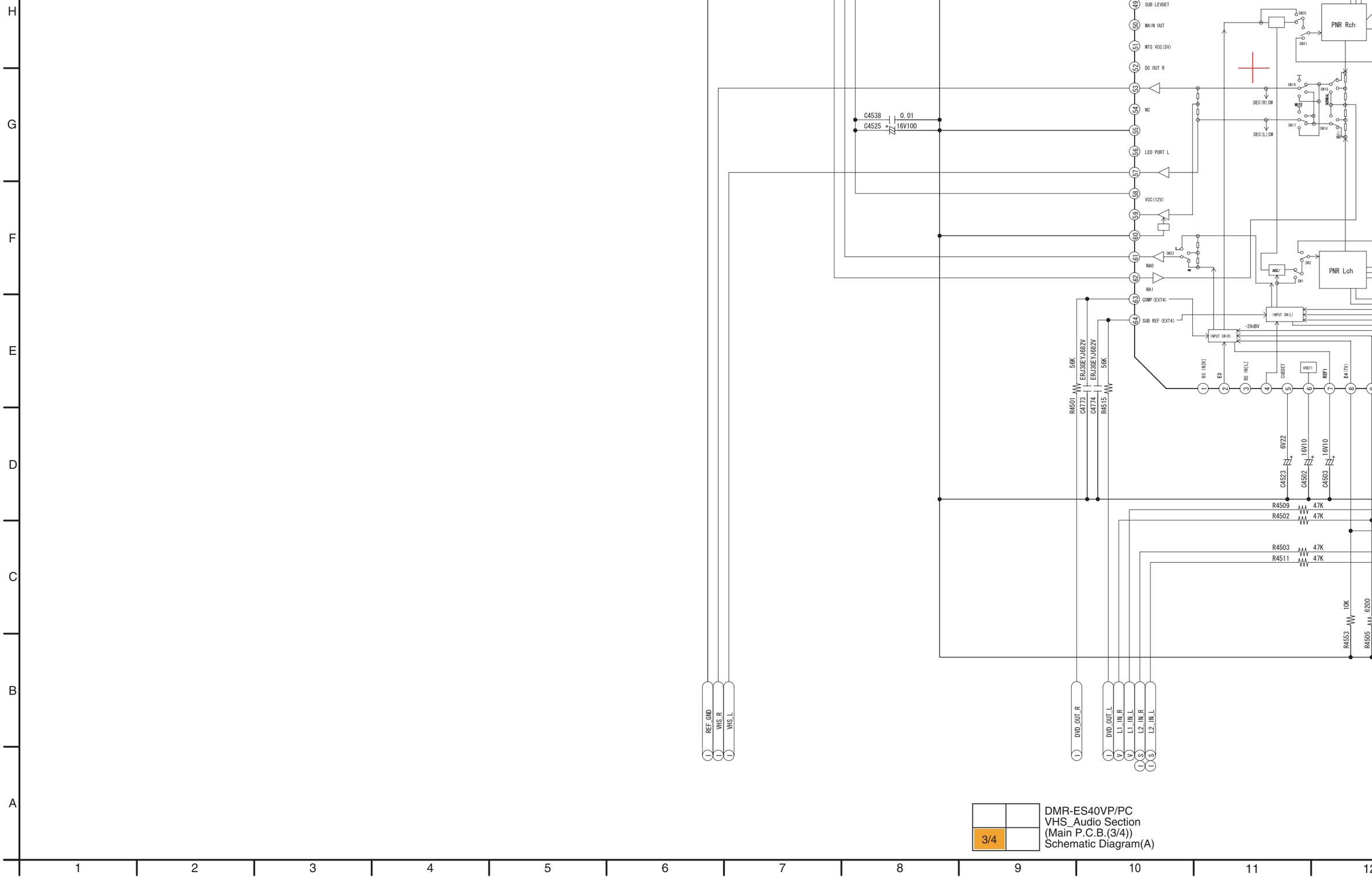
4/4

11 12 13 14 15 16 17 18 19 20 21

S4.4. VHS_Audio(A) Schematic Diagram

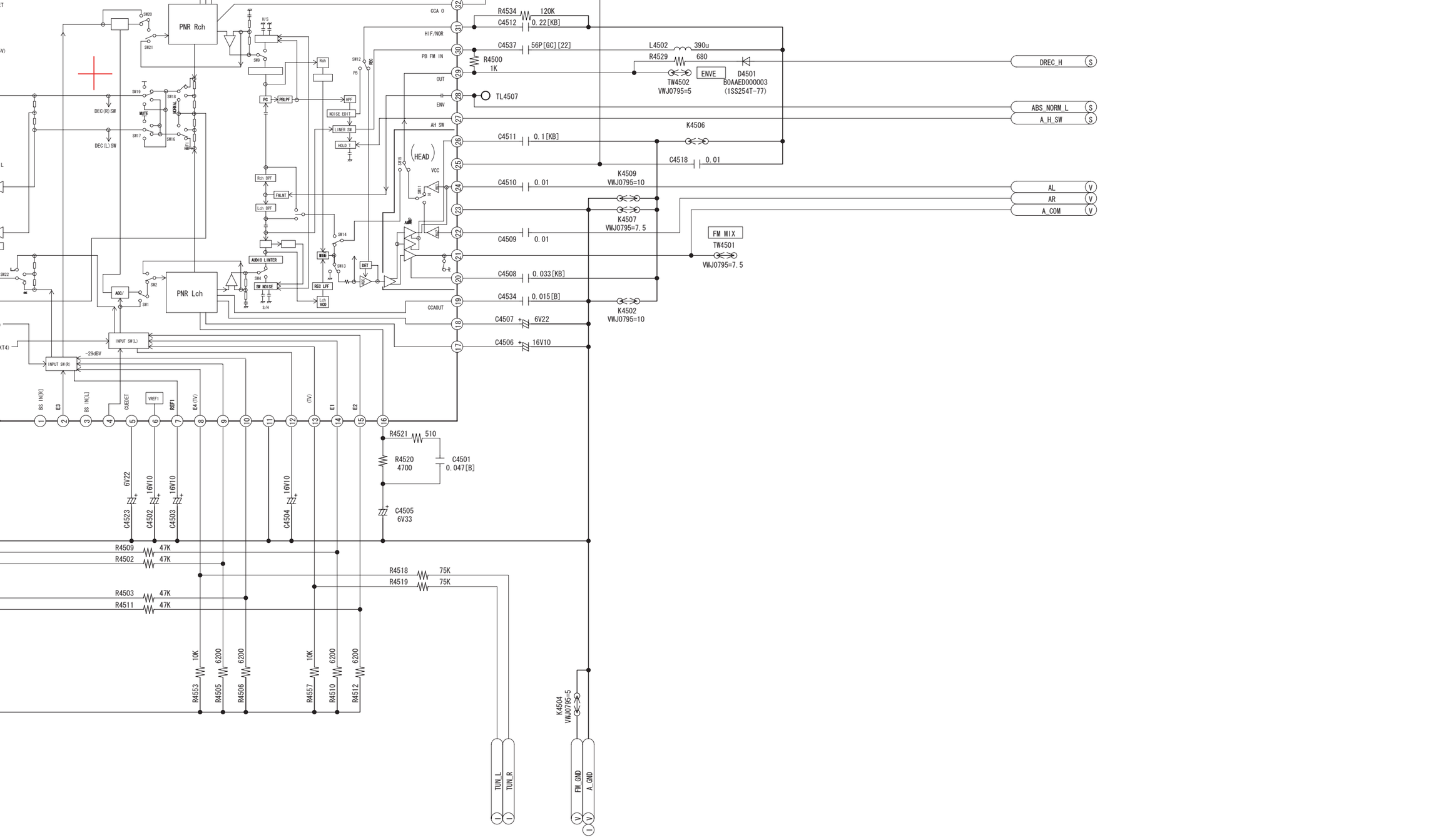



A_REG12V
OUT_NORMAL
IN_NORMAL
FSC
IIC_DATA
IIC_CLK
FM_MUTE_H
C4521 16V10
R4526 24K
C4526 16V10
R4527 6800
TL4502
TL4501
C4516 16V10
R4539 1K
R4540 1K
C4517 6V22
R4538 39K
R4525 1K
C4515 6V33
C4514 16V10
C4513 6V22
R4508 4700
C4522 0.047[B]
R4522 510
C4535 0.015[B]
SIF IN
DEM REF
MAIN REF
VCO-TO adj LOGIN
REG
LOGIC
DATA
CLK
VCC(5V)
ZZ-PROM
GND
RECADJ
MUTE OT
NR DET1
NR DET2
NR REF
PNR Rch
SW20
SW21
H/S
DRV
Rch
SW12
REC
PB
SW19
SW18
SW17
SW16
DEC(R) SW
MUTE
NORMAL
PC
PBLPF
HPF
NOISE EDIT
LINER SW
CCA O
HIF/NOR
PB FM IN
OUT
ENV
AH SW
R4534 120K
C4512 0.22[KB]
C4537 56P[GC][22]
R4500 1K
TL4507
C4511 0.1[KB]
K4506
L4502 390u
R4529 680
ENVE
TW4502 VWJ0795=5
D4501 B0AAED000003 (1SS254T-77)
DREC_H
ABS_NORM_L
A_H_SW



DMR-ES40VP/PC
VHS_Audio Section
(Main P.C.B.(3/4))
Schematic Diagram(A)

3/4

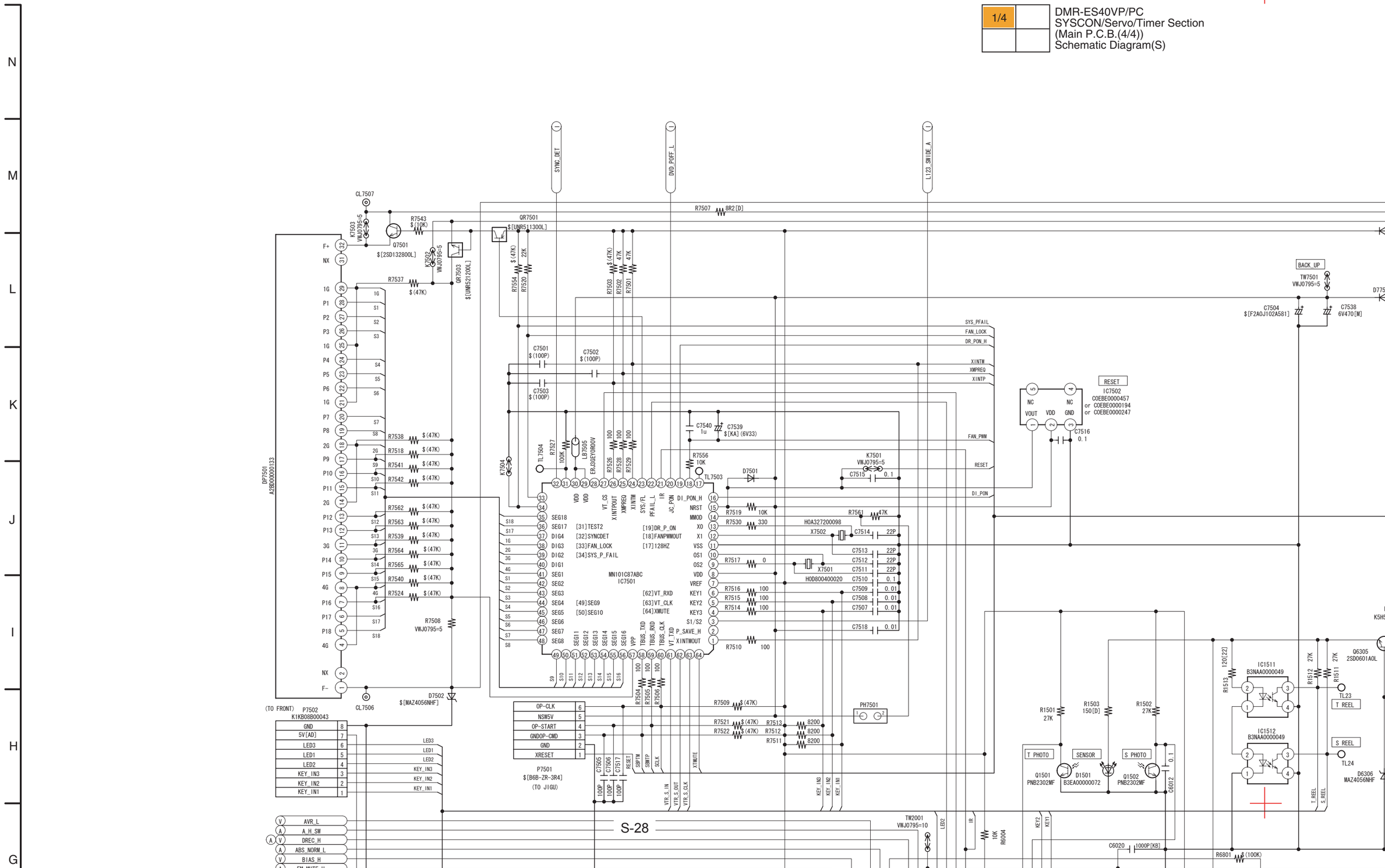


DMR-ES40VP/PC
VHS_Audio Section
(Main P.C.B.(3/4))
Schematic Diagram(A)

4/4

11 12 13 14 15 16 17 18 19 20 21

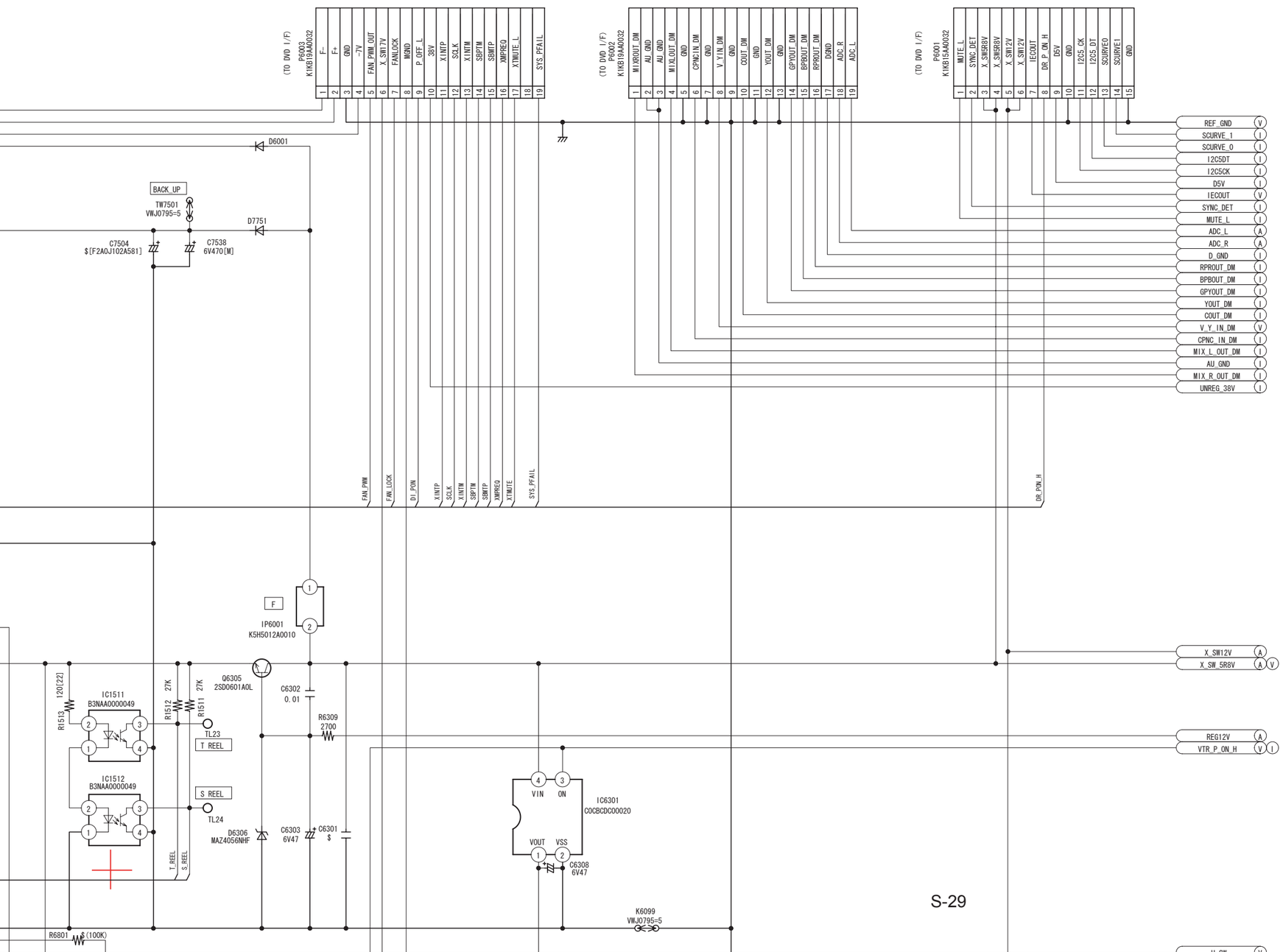
S4.5. SYSCON/Servo/Timer(S) Schematic Diagram

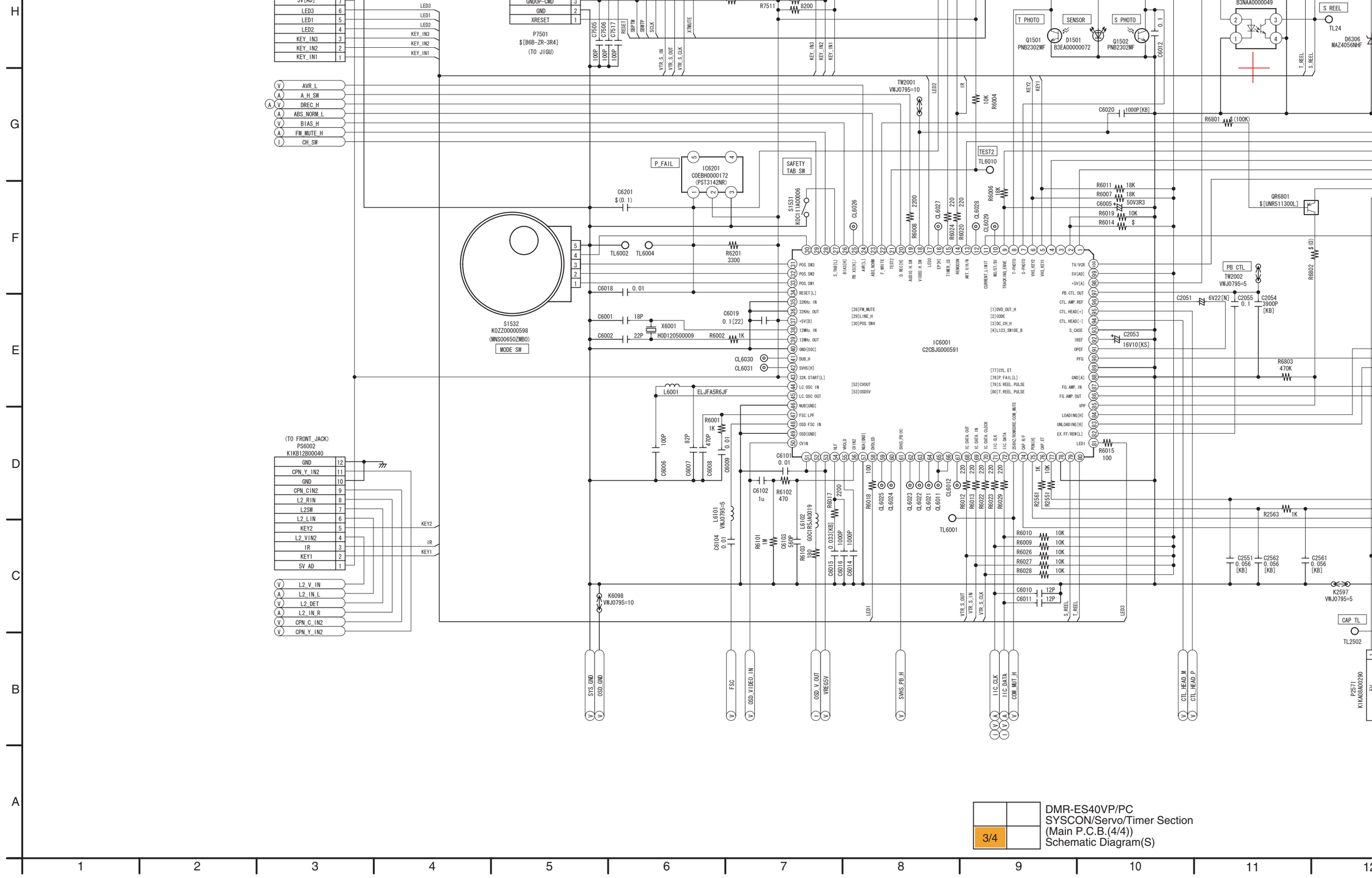


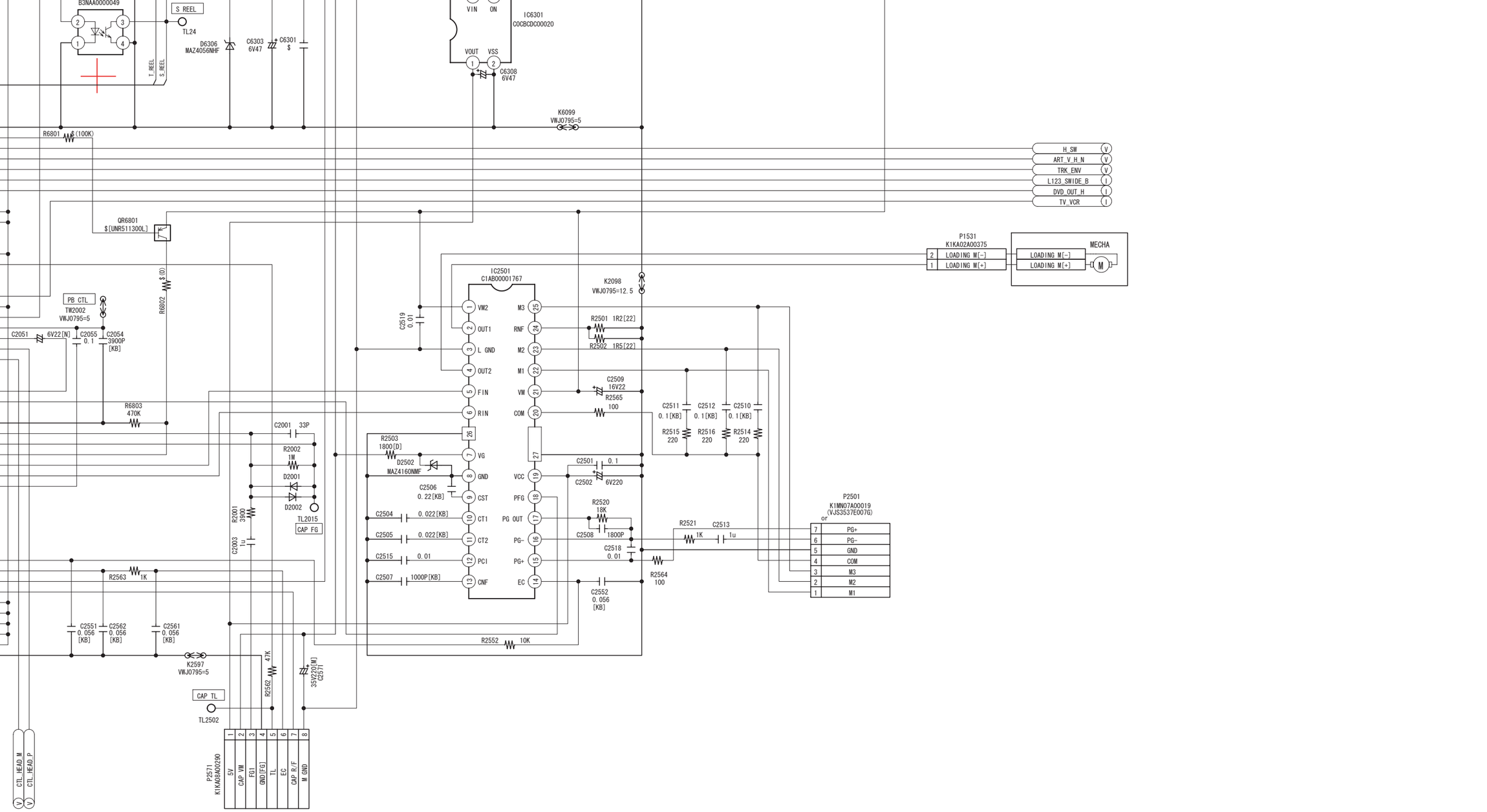
ection

	2/4

DMR-ES40VP/PC
SYSCON/Servo/Timer Section
(Main P.C.B.(4/4))
Schematic Diagram(S)




P7501
$[B6B-ZR-3R4]
(TO JIGU)
GNDOP-CMD
GND
XRESET
LED3
LED1
LED2
KEY_IN3
KEY_IN2
KEY_IN1
AVR_L
A_H_SW
DREC_H
ABS_NORM_L
BIAS_H
FM_MUTE_H
CH_SW
T PHOTO
SENSOR
S PHOTO
Q1501
PNB2302MF
D1501
B3EA00000072
Q1502
PNB2302MF
B3NAA0000049
S REEL
TL24
D6306
MAZ4056NHF
T_REEL
S_REEL
TW2001
VWJ0795=10
IR
KEY2
KEY1
C6020
1000P[KB]
R6801
$(100K)
TEST2
TL6010
P_FAIL
IC6201
C0EBH0000172
(PST3142NR)
SAFETY
TAB SW
S1531
K0G111A00006
C6201
$(0.1)
R6011
18K
R6007
18K
C6005
50V3R3
R6019
10K
R6014
$
QR6801
$[UNR511300L]
S1532
K0ZZ00000598
(MNS00650ZMB0)
MODE SW
TL6002
TL6004
R6201
3300
C6018
0.01
C6001
18P
X6001
H0D120500009
C6002
22P
R6002
1K
C6019
0.1[22]
CL6030
CL6031
IC6001
C2CBJG000591
L6001
ELJFA5R6JF
R6001
1K
C6101
0.01
C6102
1u
R6102
470
L6101
VWJ0795=5
C6104
0.01
R6101
1M
C6103
560P
L6102
G0C1R5JA0019
R6103
1R0
C6015
C6016
C6014
0.033[KB]
1000P
R6017
2200
R6018
100
CL6025
CL6024
CL6023
CL6022
CL6021
CL6011
CL6012
TL6001
R6012
R6013
R6022
R6023
R6029
220
R6010
R6009
R6026
R6027
R6028
10K
R2561
R2551
1K
R2563
C6010
C6011
12P
K6098
VWJ0795=10
PB CTL
TW2002
VWJ0795=5
C2051
6V22[N]
C2055
0.1
C2054
3900P
[KB]
C2053
16V10[KS]
R6803
470K
R6802
$(0)
C2551
C2562
C2561
0.056
[KB]
K2597
VWJ0795=5
CAP TL
TL2502
P2571
K1KA08A00290
(TO FRONT_JACK)
PS6002
K1KB12B00040
GND
CPN_Y_IN2
CPN_CIN2
L2_RIN
L2SW
L2_LIN
KEY2
L2_VIN2
IR
KEY1
5V AD
L2_V_IN
L2_IN_L
L2_DET
L2_IN_R
CPN_C_IN2
CPN_Y_IN2
R6015
100
C6006
C6007
C6008
C6009
100P
82P
470P
0.01
SYS_GND
OSD_GND
FSC
OSD_VIDEO_IN
OSD_V_OUT
VREG5V
SVHS_PB_H
IIC_CLK
IIC_DATA
COM_MUT_H
CTL_HEAD_M
CTL_HEAD_P
DMR-ES40VP/PC
SYSCON/Servo/Timer Section
(Main P.C.B.(4/4))
Schematic Diagram(S)
3/4



ection

DMR-ES40VP/PC
SYSCON/Servo/Timer Section
(Main P.C.B.(4/4))
Schematic Diagram(S)

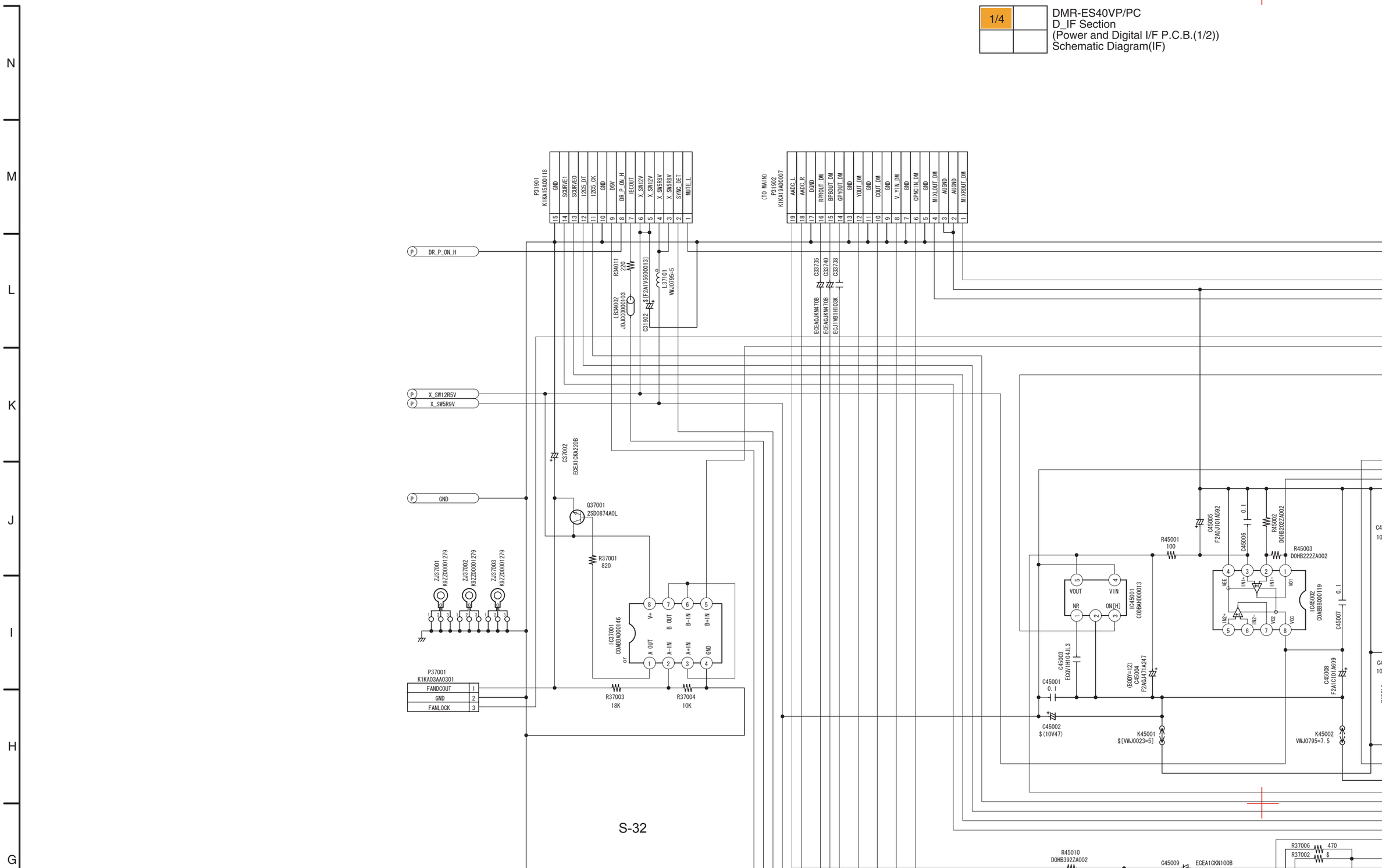
4/4

11 12 13 14 15 16 17 18 19 20 21

S4.6. D_IF(IF) Schematic Diagram

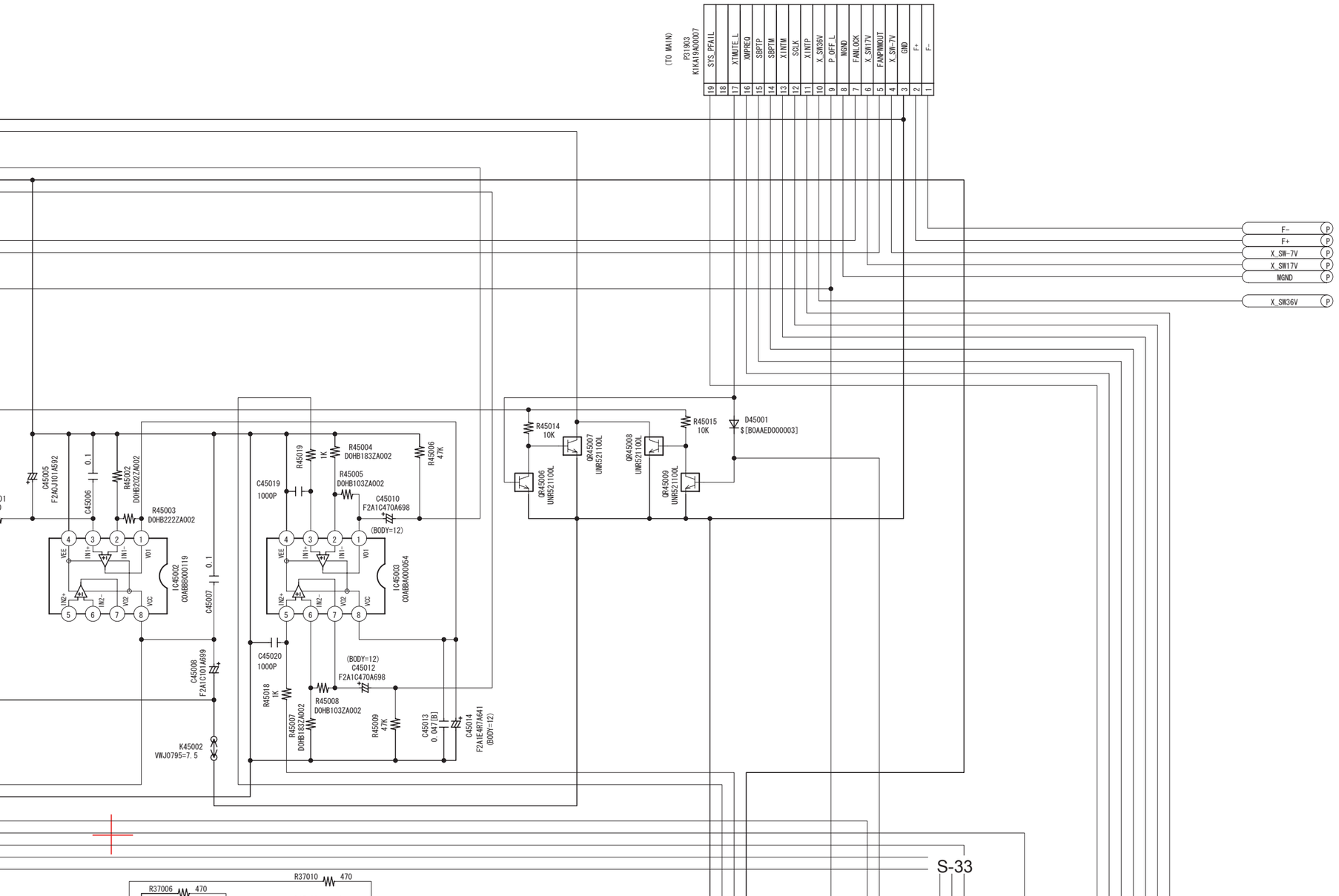
1/4

DMR-ES40VP/PC
D_IF Section
(Power and Digital I/F P.C.B.(1/2))
Schematic Diagram(IF)



C.B.(1/2))

	2/4	DMR-ES40VP/PC D_IF Section (Power and Digital I/F P.C.B.(1/2)) Schematic Diagram(IF)



P D1R8V
P X_SW4V
P X_SW3R2V
P D_P_OFF_L

K31001 VWJ0795=12.5

R45010 D0HB392ZA002
R45011 D0HB392ZA002
R45012 D0HB622ZA002
R45013 D0HB622ZA002
C45009 ECEA1CKN100B
C45011 ECEA1CKN100B
R37006 470
R37002 $
R37007 470
R37005 22
Q37002
C37001 0.1[KB]
C37003 6V47[KS]

K31003 $
K31000
R31006 3300
R31007 100
D31002
R31005 3300
C31008 F1JOJ106A014
C37111 $
L37102 68u

IC31003 C0CBCB000048
V IN NC NC ON[H]
V OUT NC CN GND
C31006 F1H1A105A028
C31007 ECJ1VB0J105K
C31001 0.01[KB]
R31004 $(470)
C31009 F1H1A105A028

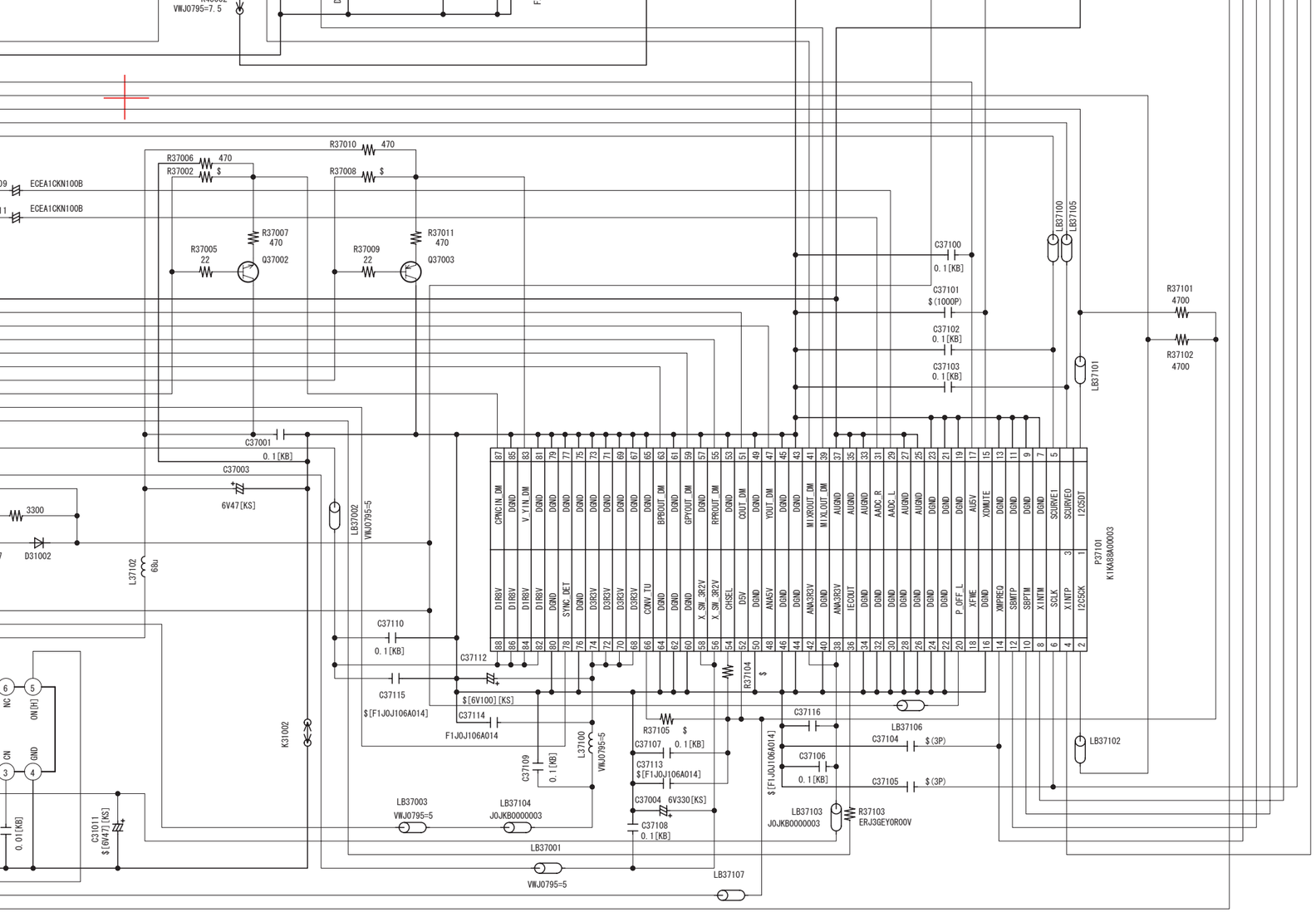
IC31004 C0CBCB000048
C31010 ECJ1VB0J105K
C31004 0.01[KB]
C31011 $[6V47][KS]

IC31002 C0CBCB000052 (S-815A50AMC)
VO NC
VIN GND CNT
D31001
R31002 220
C31002 F1H1A105A028
R31001 22K
C31003 F1JOJ106A014
C31005 ECJ1VB0J105K
R31003 $(470)

IC31005 $[C0EBE0000457]
3R3V_DET
NC GND
VDD
NC OUT
C31012 $(0.1)
C31013 $(0.01)
R31008 $(15K)
C31014 $(0.01)
QR31001 $[DNR521200L]

K31002

DMR-ES40VP/PC
D_IF Section
(Power and Digital I/F P.C.B.(1/2))
Schematic Diagram(IF)
3/4



C.B.(1/2))

DMR-ES40VP/PC
D_IF Section
(Power and Digital I/F P.C.B.(1/2))
Schematic Diagram(IF)
4/4

11 12 13 14 15 16 17 18 19 20 21

S4.7. Power(P) Schematic Diagram

DMR-ES40VP/PC
Power Section
Power and Digital I/F P.C.B.(2/2)
Schematic Diagram(P)

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 2A 250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D'INCENDIE N'UTILISERQUE DES FUSIBLE DE MEME TYPE 2A 250V

2A 250V

P11101 K2AB2B000008

ZA11101 EYF52BCY
ZA11102 EYF52BCY

F11101 K5D202BK0005 250V2A

SEE THE SERVICE MANUAL

(UL RECOGNIZED)

VA11101 #ERZVA5V471

C11101 #ECQU2A223MLC

C11103 #ECKWNA101MBV
C11104 #ECKWNA101MBV
C11105 #ECKWNA471MBV
C11106 #ECKWNA471MBV

L11101 #G0B832L00001
L11102 #G0B832L00001

C11102 #ECQU2A683MLC

R11101 $[ERDS1TJ474] 470K[1/2W]

D11101 B0EDKT000009

LB11101 J0JKB0000003

C11108 F2B2E2210011 250V220

D11102 B0AAGR000003

T11201 G4D2AD000254

P1 PT P2 B1 B2

D11401 B0JAMG000010
D11402 B0JAMG000010
D11403 B0JCNG000003
D11404 B0JCNG000003
D11406 B0JAME000025
D11405 B0JAME000025

LB11102 J0JKB0000003

LB11103 $(J0JHC0000048)

C11109 $[#ECKWNA102MEV] or

C11107 #ECKWNA102MEV

LB11201 J0JHC0000048

R11201 100[22]
R11202 100[22]

D11201 B0AADM000003

C11201 EEUFM1V680B 35V68[FM]

IC11201 RADIATION
ZA11201 $[VSC5606]
ZA11202 $[XYN3+J8FJ]

IC11201 C0DACZH00030

R11203 15K[22]

C11211 330P[22]

C11203 220P[22]

D11202 MAZ80910ML

D11203 MA2J11100L

C11205 F1B3A3920001 or 3900P[1KV]

R11204 680K[22]

D11204 MAZ73000BC

C11202 1000P [KB][22]

R11207 36K[G][22]

R11208 1200[G][22]

R11206 470[G][22]

R11205 6800[G][22]

C11204 3300P[KB][22]

Q11301 #B3PBA0000237

C11301 $[22](0.1)

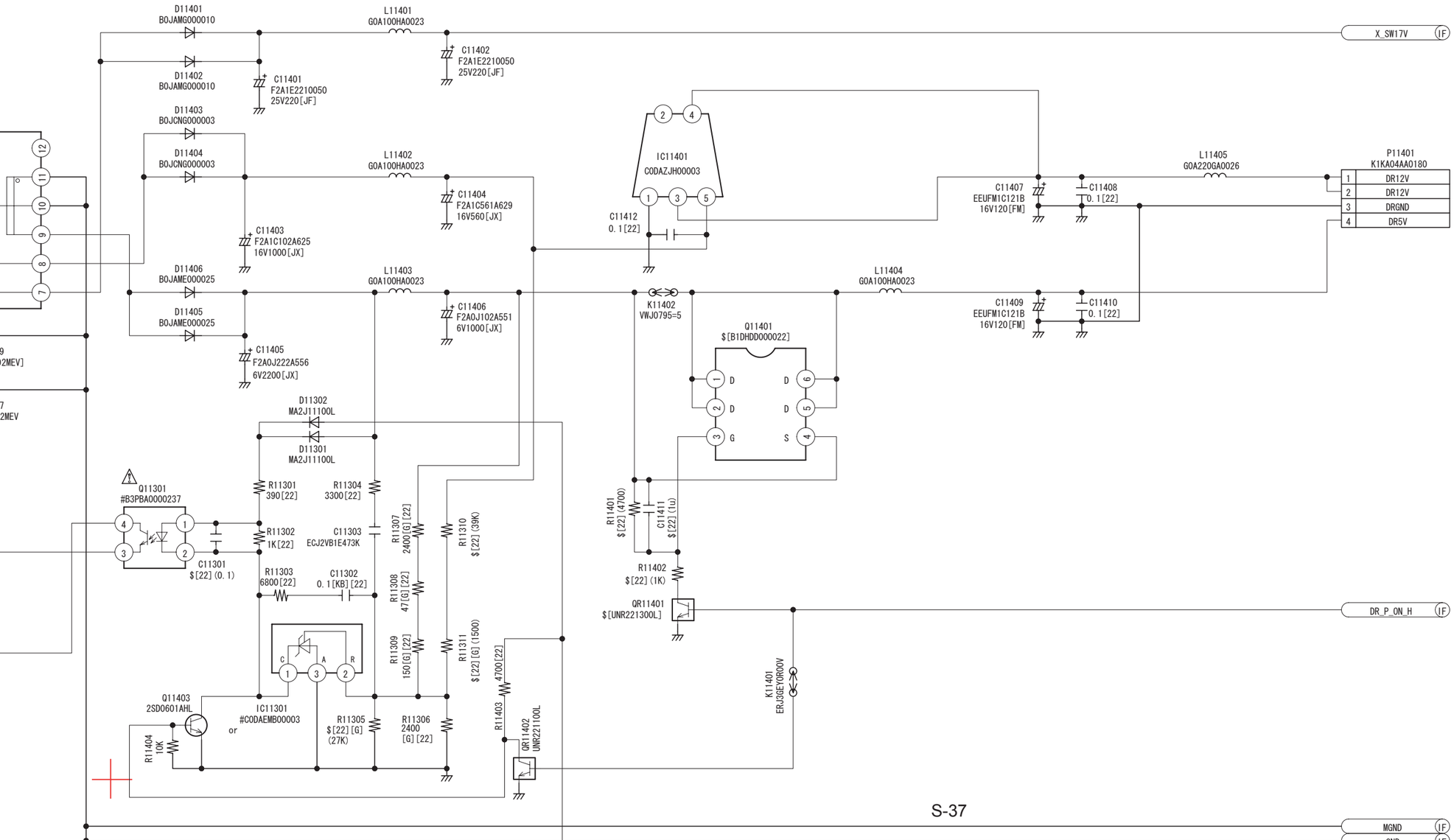
Q11403 2SD0601AHL

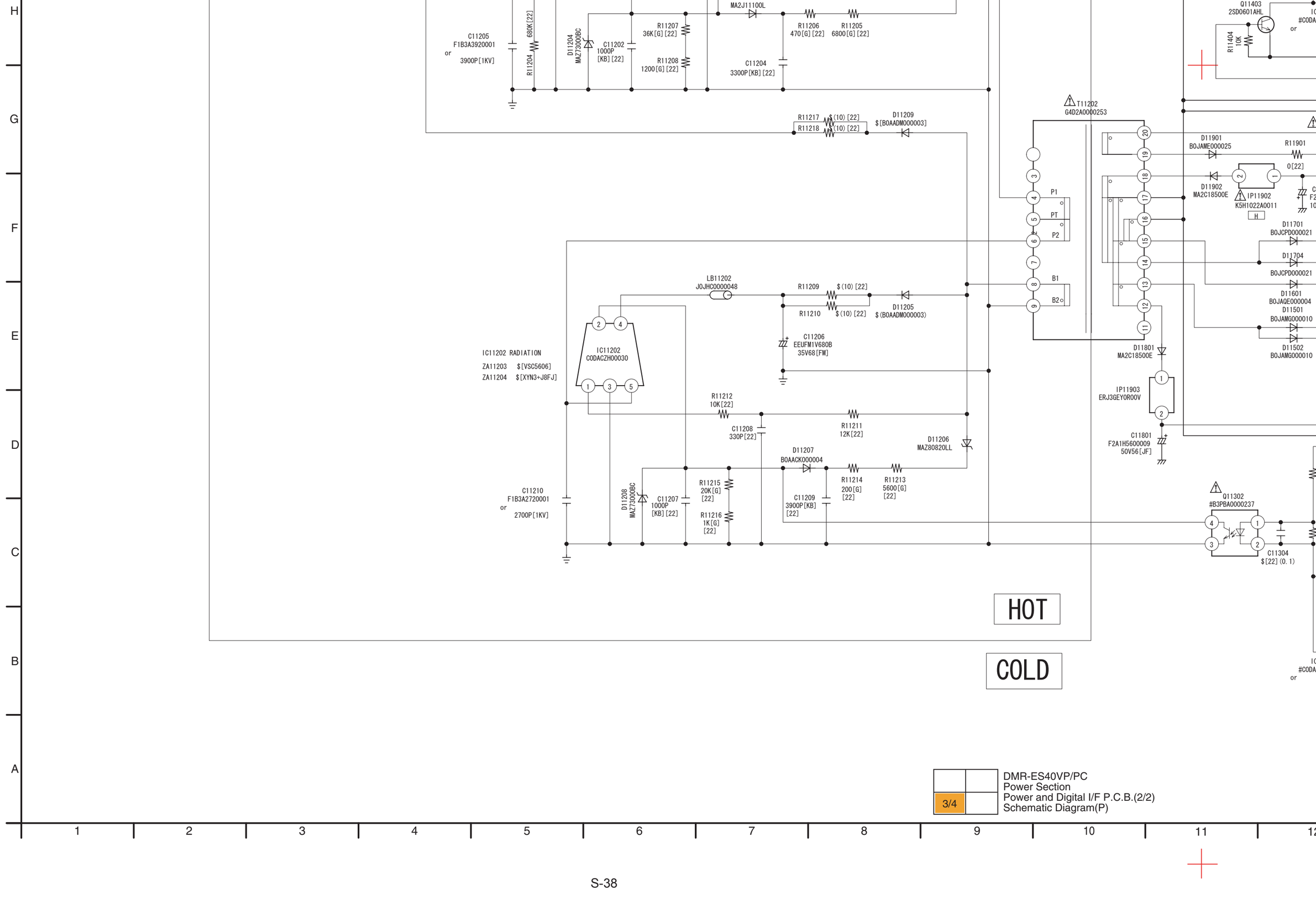
R11404 10K

T11202 G4D2A0000253

R11217 $(10)[22]

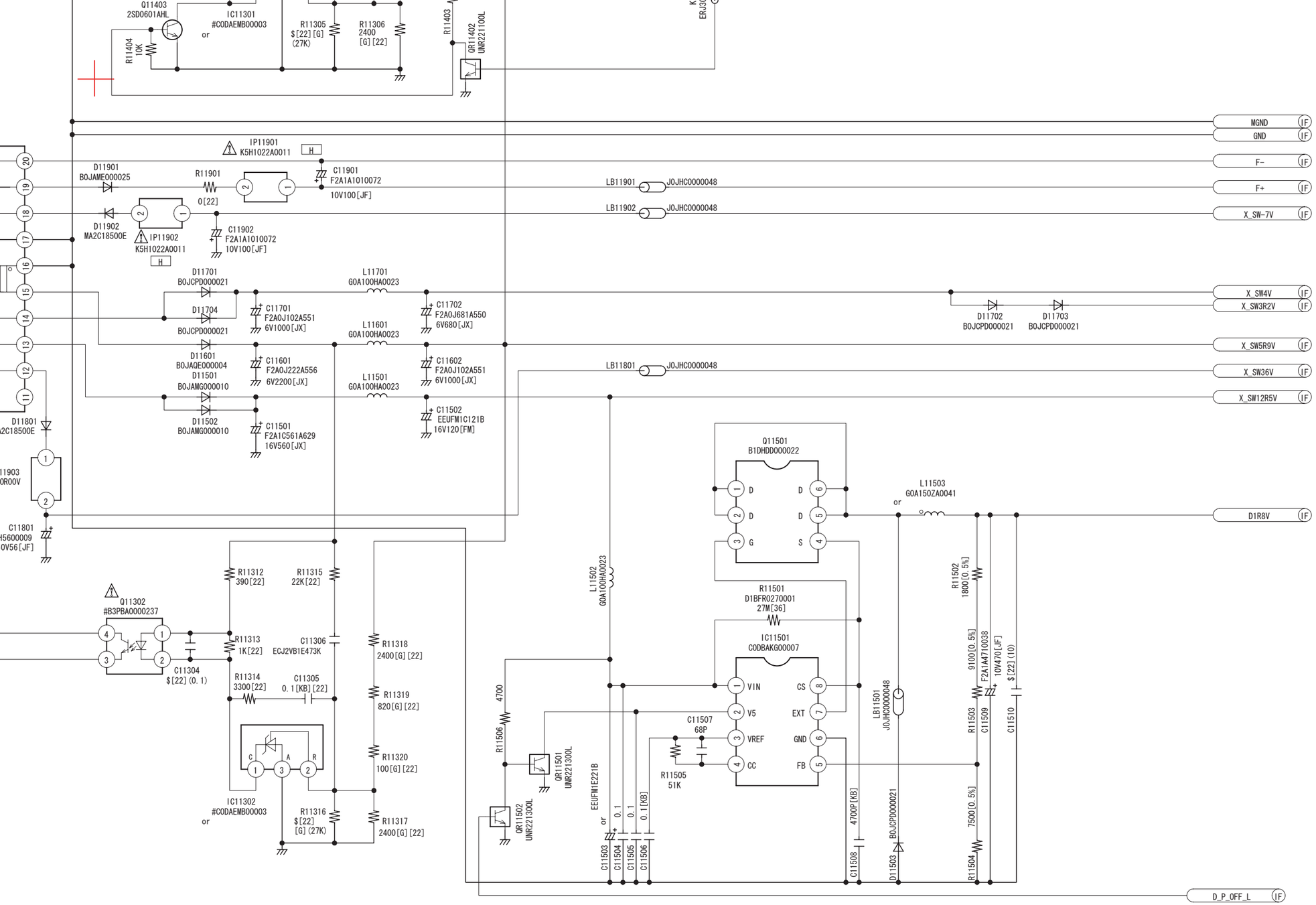
D11209 $[B0AADM000003]


D11401
BOJAMG000010
D11402
BOJAMG000010
C11401
F2A1E2210050
25V220[JF]
L11401
G0A100HA0023
C11402
F2A1E2210050
25V220[JF]
X_SW17V
IF
D11403
BOJCNG000003
D11404
BOJCNG000003
C11403
F2A1C102A625
16V1000[JX]
L11402
G0A100HA0023
C11404
F2A1C561A629
16V560[JX]
IC11401
C0DAZJH00003
C11412
0.1[22]
C11407
EEUFM1C121B
16V120[FM]
C11408
0.1[22]
L11405
G0A220GA0026
P11401
K1KA04AA0180
1 DR12V
2 DR12V
3 DRGND
4 DR5V
D11406
BOJAME000025
D11405
BOJAME000025
C11405
F2A0J222A556
6V2200[JX]
L11403
G0A100HA0023
C11406
F2A0J102A551
6V1000[JX]
K11402
VWJ0795=5
L11404
G0A100HA0023
C11409
EEUFM1C121B
16V120[FM]
C11410
0.1[22]
Q11401
$[B1DHDD000022]
D11302
MA2J11100L
D11301
MA2J11100L
Q11301
#B3PBA0000237
R11301
390[22]
R11304
3300[22]
R11302
1K[22]
C11303
ECJ2VB1E473K
C11301
$[22](0.1)
R11303
6800[22]
C11302
0.1[KB][22]
R11307
2400[G][22]
R11310
$[22](39K)
R11308
47[G][22]
R11309
150[G][22]
R11311
$[22][G](1500)
R11401
$[22](4700)
C11411
$[22](1u)
R11402
$[22](1K)
QR11401
$[UNR221300L]
DR_P_ON_H
K11401
ERJ3GEY0R00V
4700[22]
R11403
Q11403
2SD0601AHL
IC11301
#C0DAEMB00003
or
R11404
10K
R11305
$[22][G]
(27K)
R11306
2400
[G][22]
QR11402
UNR221100L
MGND
GND
IP11901
K5H1023A0011
H



DMR-ES40VP/PC
Power Section
Power and Digital I/F P.C.B.(2/2)
Schematic Diagram(P)

3/4

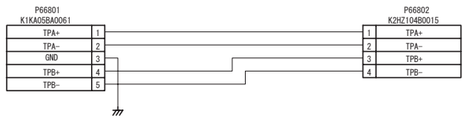


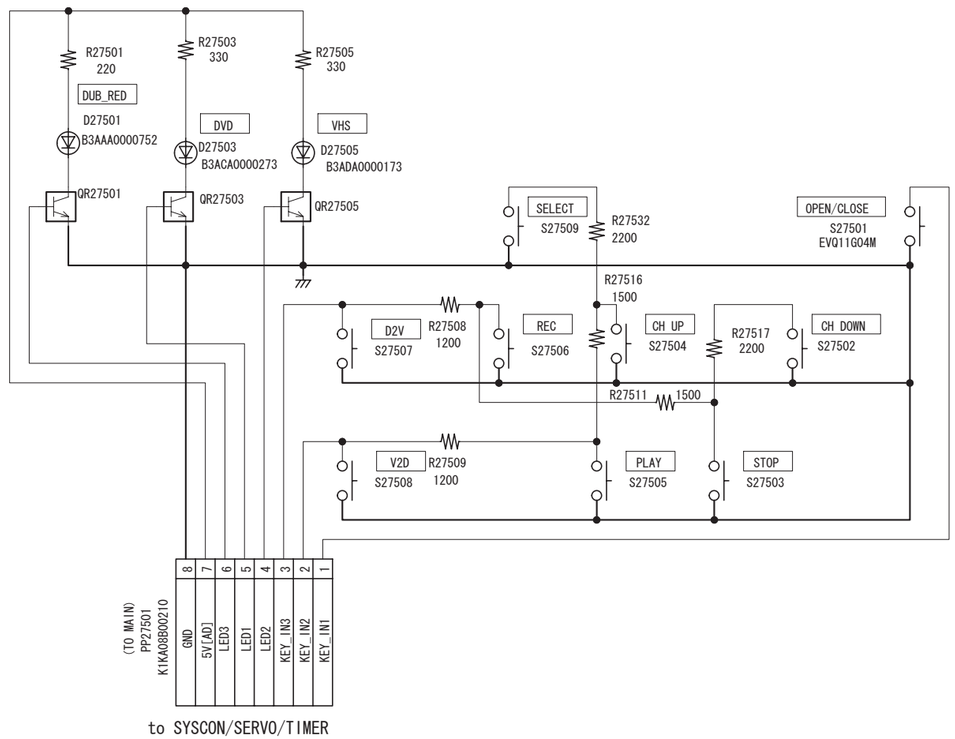
B.(2/2)

DMR-ES40VP/PC
Power Section
Power and Digital I/F P.C.B.(2/2)
Schematic Diagram(P)
4/4

11 12 13 14 15 16 17 18 19 20 21

S4.8. DV_Jack Schematic Diagram / S4.9. Front Schematic Diagram

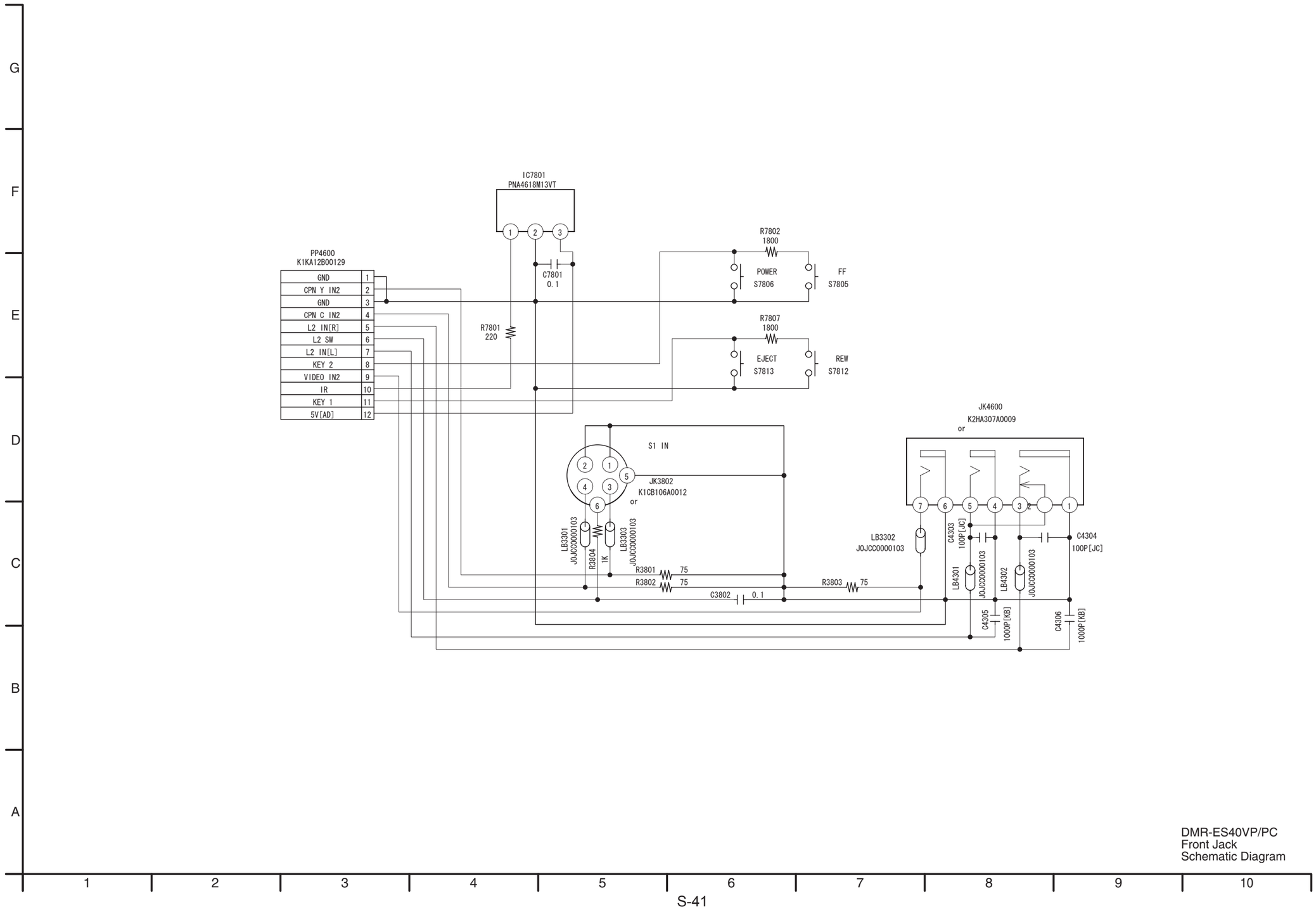




DMR-ES40VP/PC
DV_Jack
Schematic Diagram

DMR-ES40VP/PC
Front
Schematic Diagram

S4.10. Front Jack Schematic Diagram

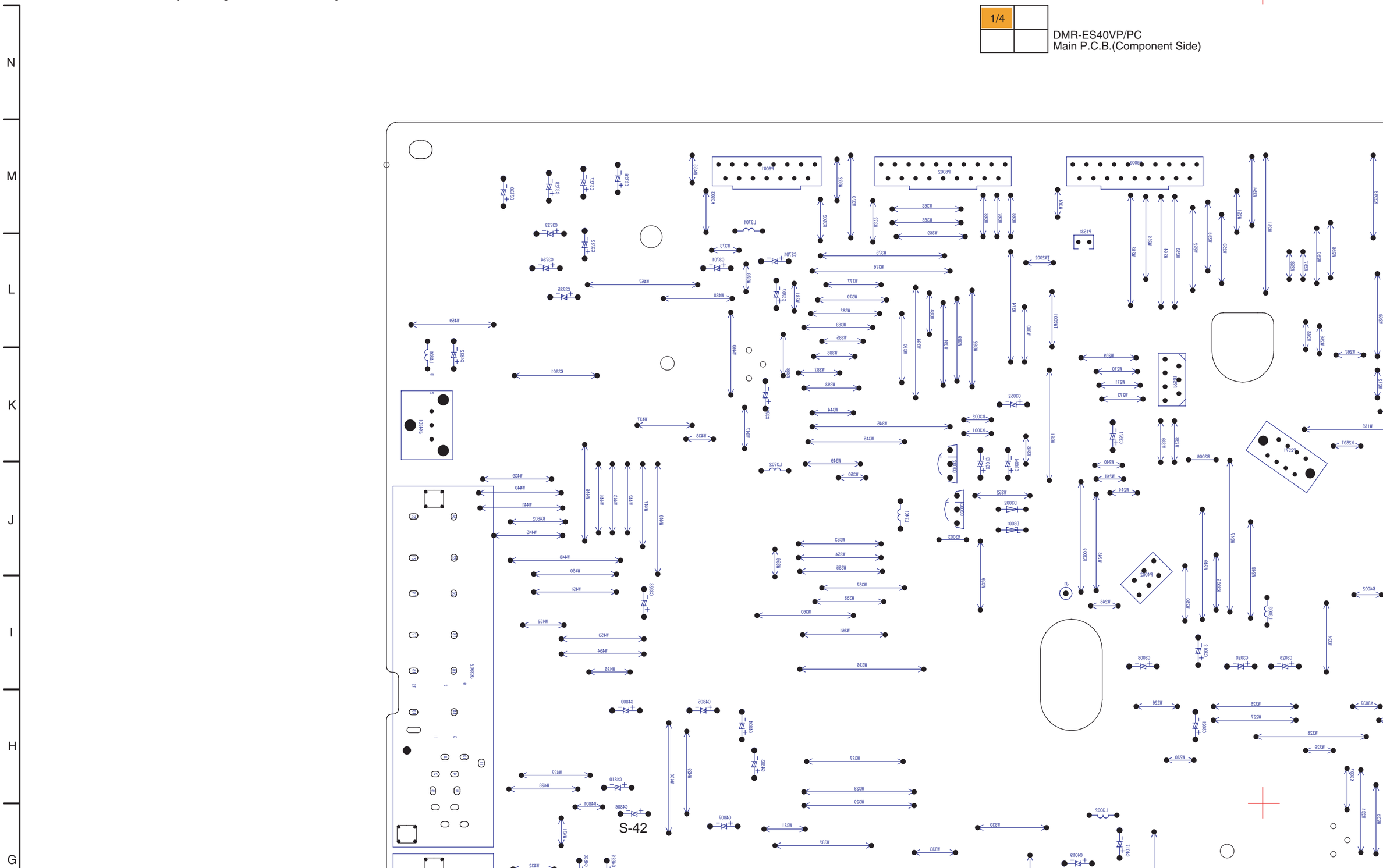


DMR-ES40VP/PC
Front Jack
Schematic Diagram

S5. Print.Circuit.Board.
S5.1. Main P.C.B.
S5.1.1. Main P.C.B.(Component Side)

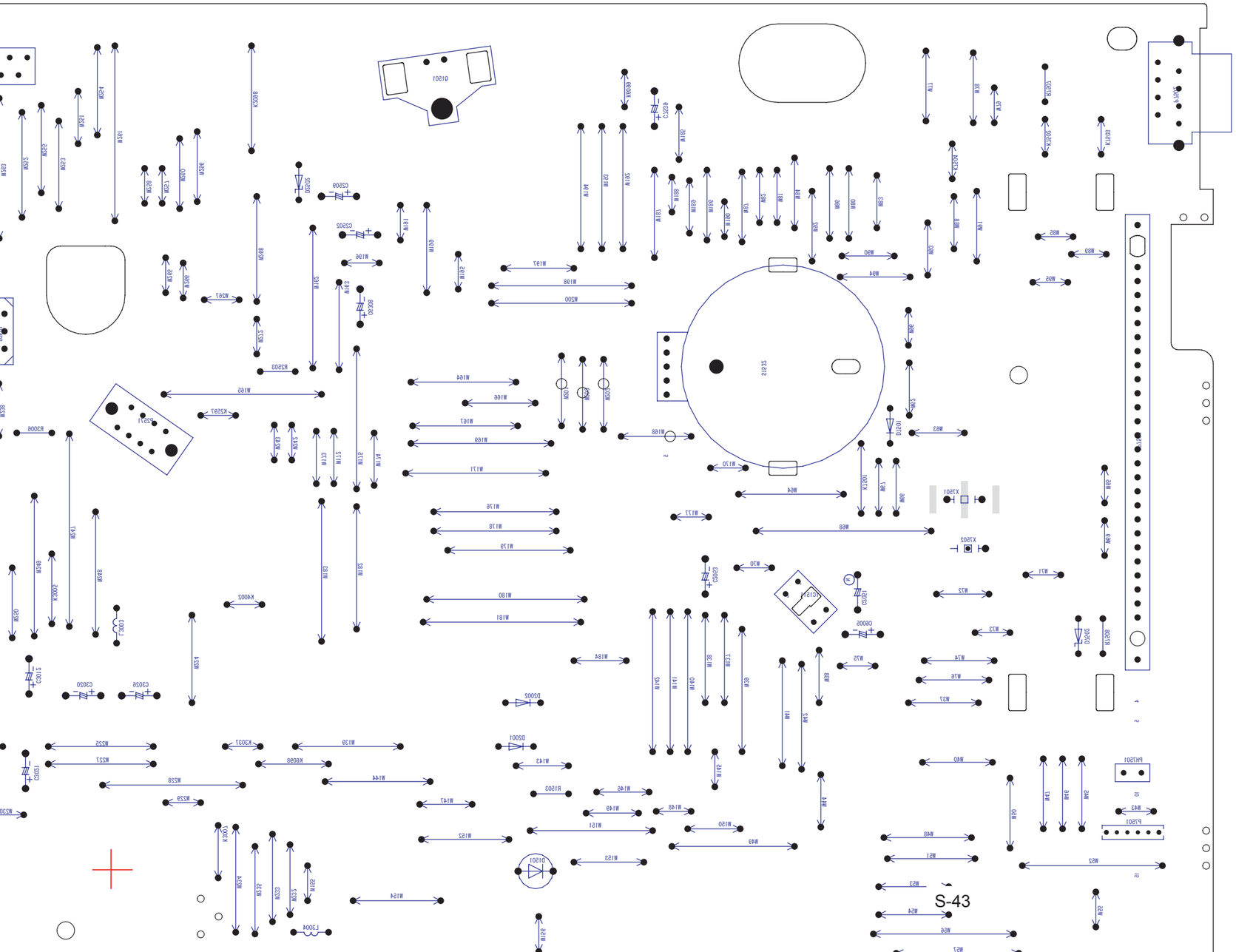
1/4	

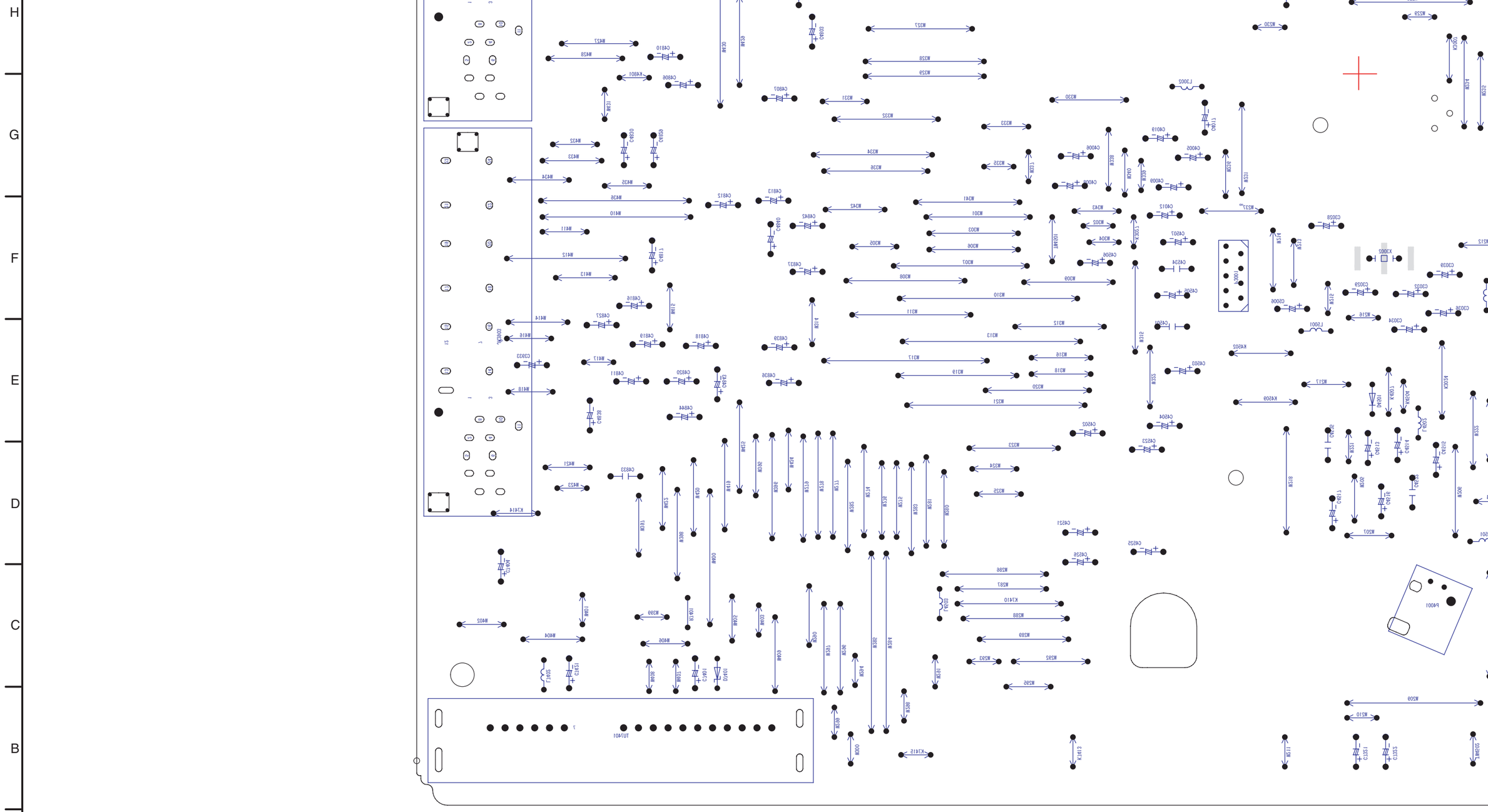
DMR-ES40VP/PC
Main P.C.B.(Component Side)



Side)

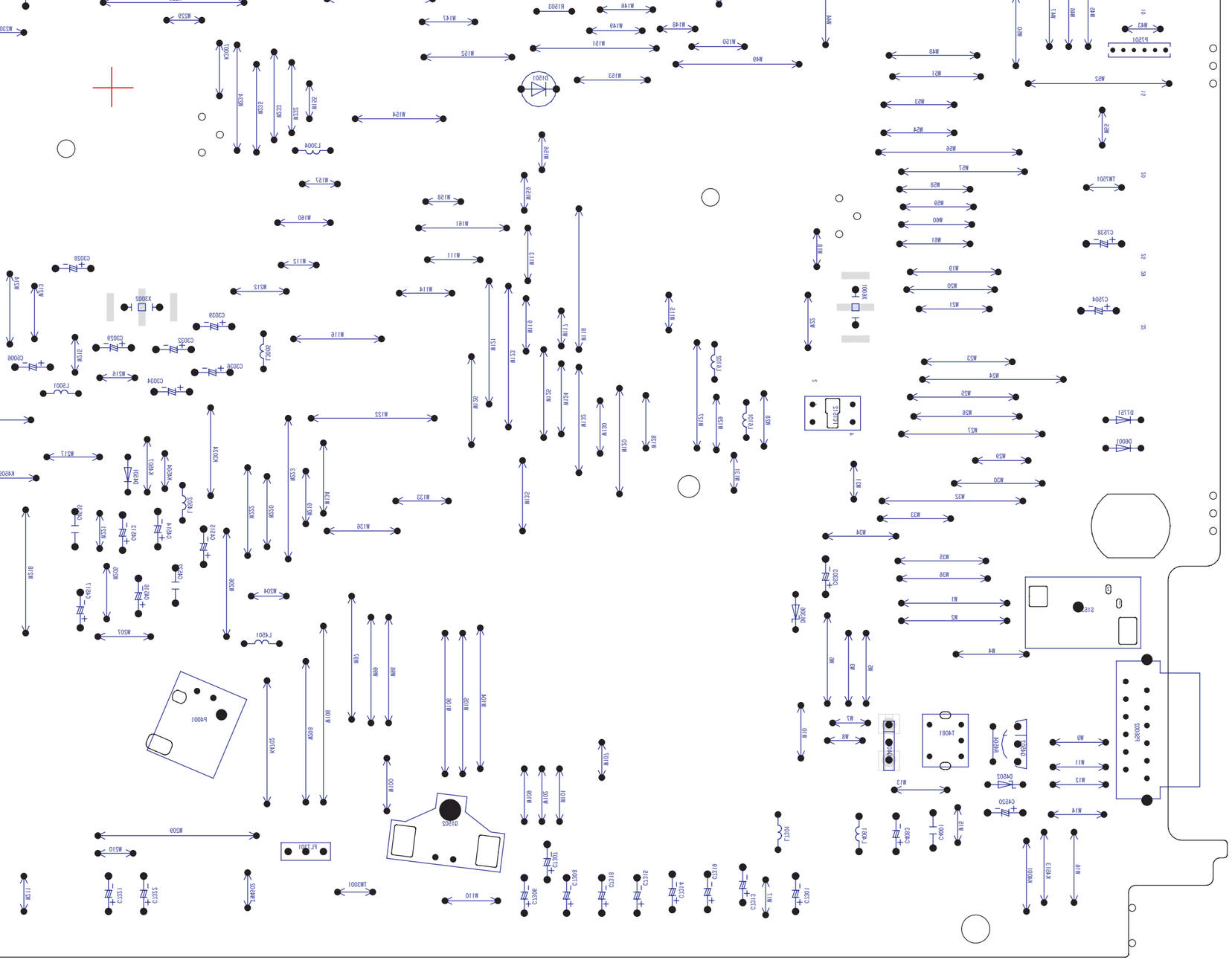
DMR-ES40VP/PC
Main P.C.B.(Component Side)





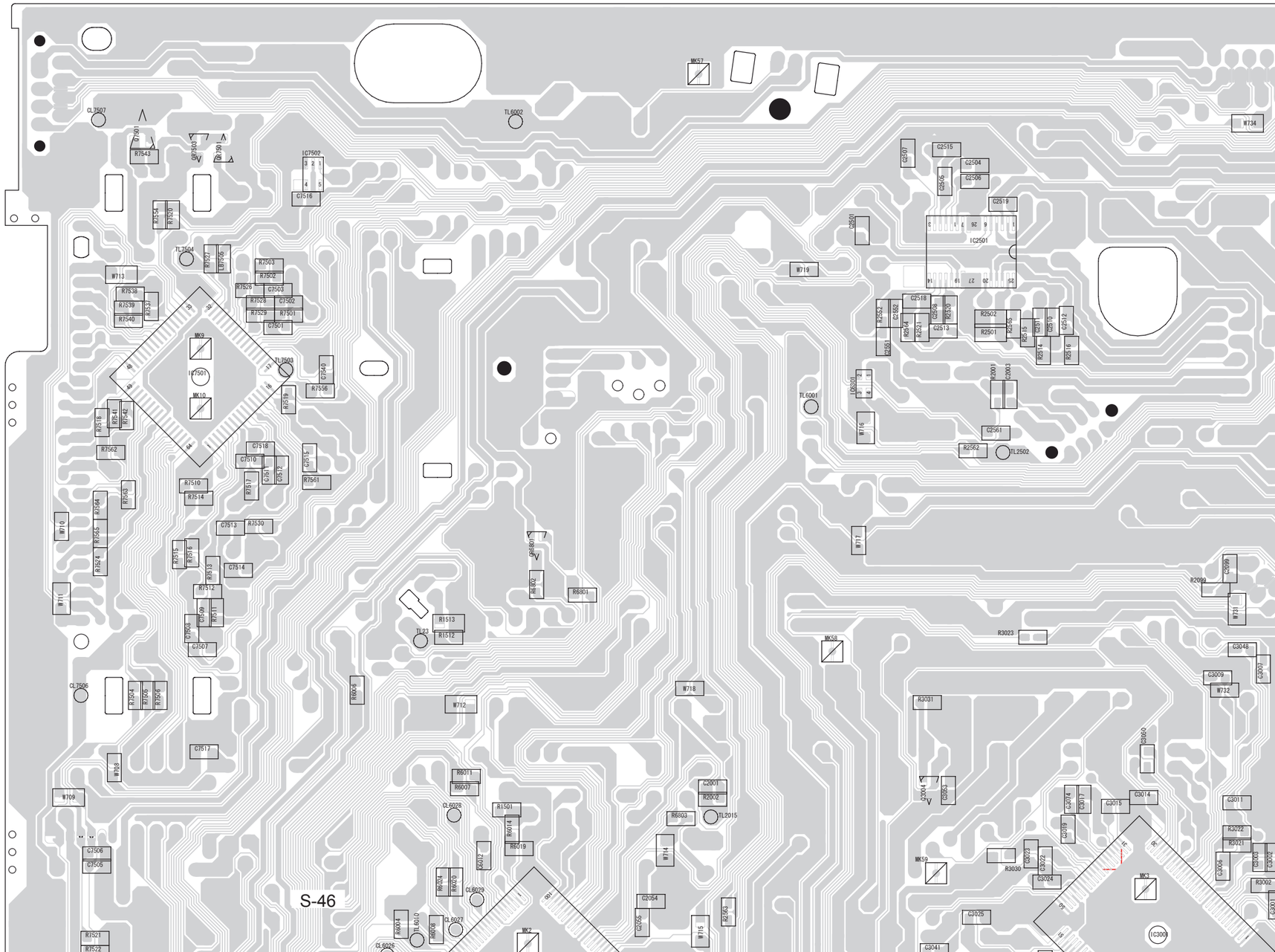
3/4

DMR-ES40VP/PC
Main P.C.B.(Component Side)



DMR-ES40VP/PC
Main P.C.B.(Component Side)

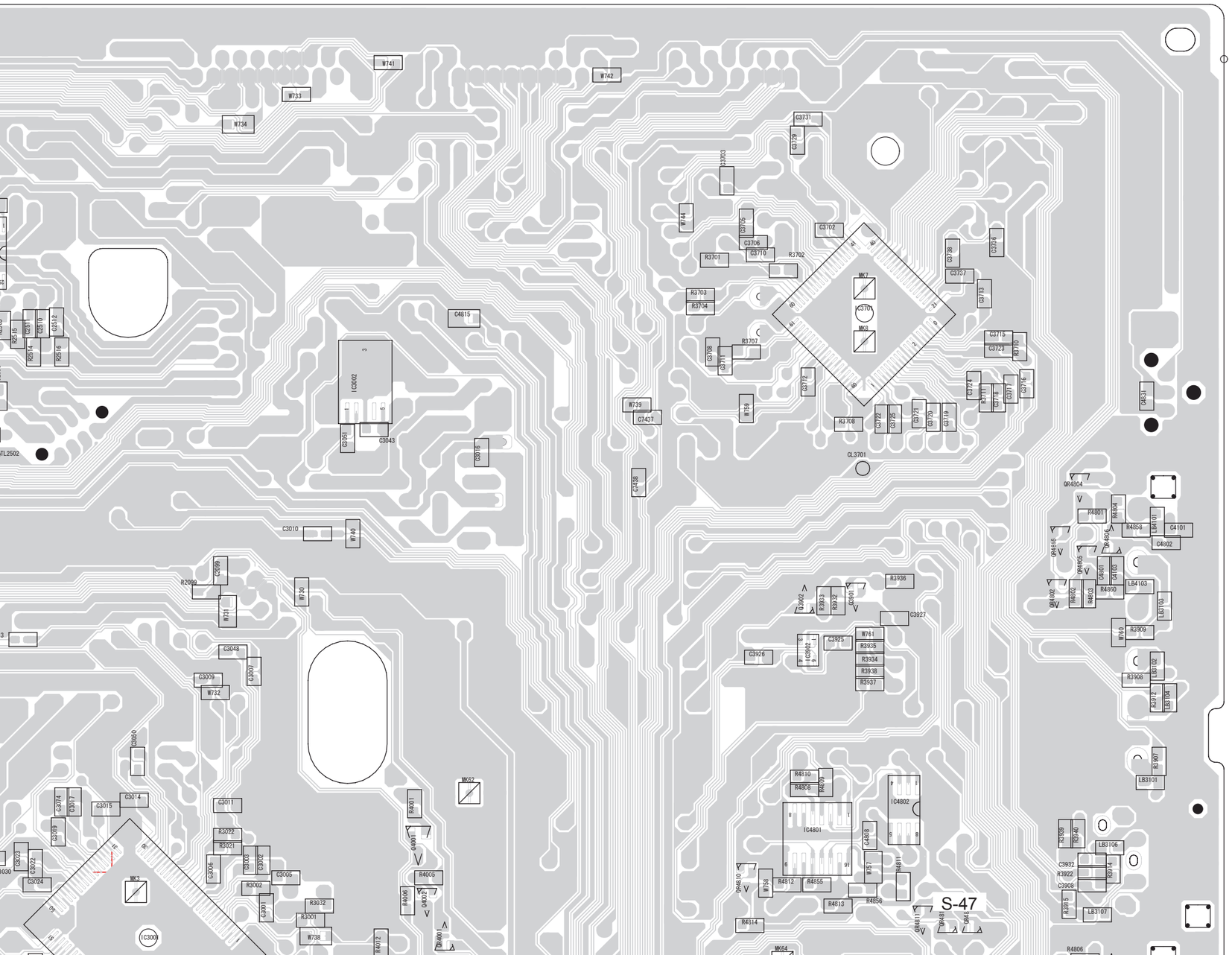
4/4

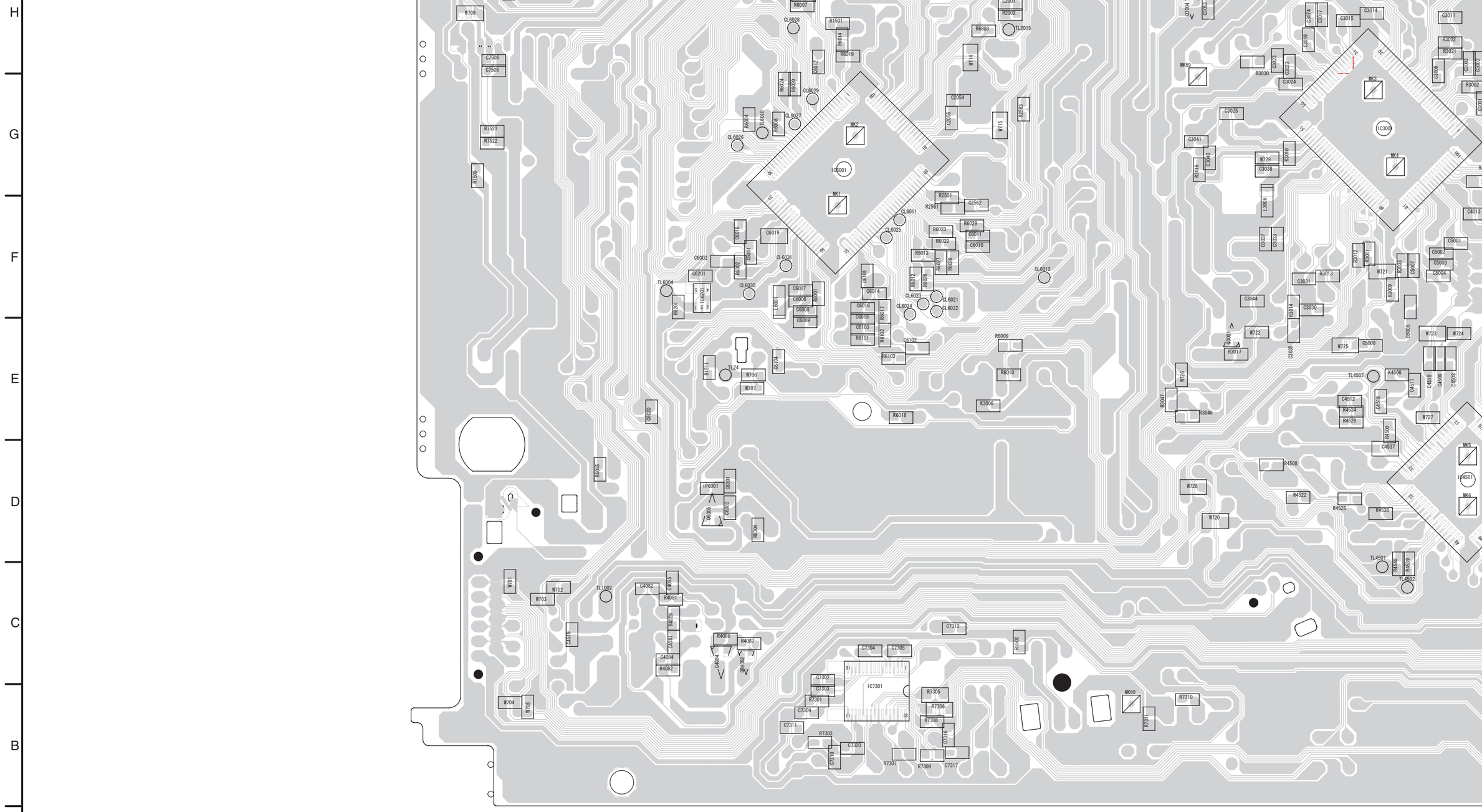


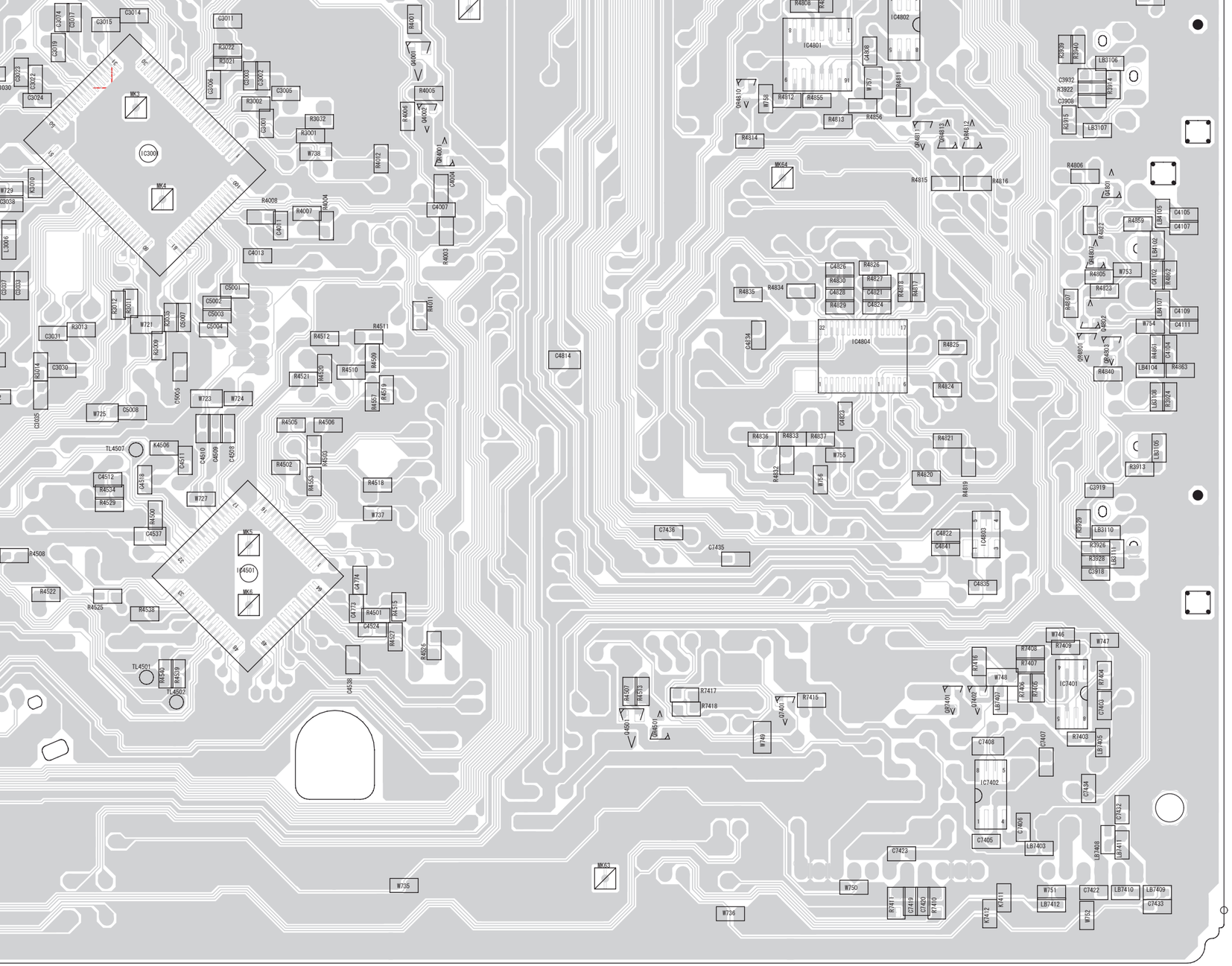
S5.1.2. Main P.C.B.(Foil Side)

1/4	

DMR-ES40VP/PC
Main P.C.B.(Foil Side)


W741
W742
W733
W734
W744
W739
W740
W730
W731
W732
W738
W759
W758
W757
W761
W760
C3731
C3729
C3703
C3705
C3706
C3710
C3702
R3701
R3702
R3703
R3704
R3707
C3708
C3711
C3712
C3722
C3725
C3721
C3720
C3719
C3738
C3737
C3713
C3715
C3723
C3710
C3714
C3717
C3716
C3716
C7437
C4815
C3043
C3016
C4488
C3010
C3048
C3009
C3007
C3060
C3074
C3017
C3014
C3015
C3019
C3023
C3022
C3024
C3011
R3022
R3021
C3006
C3003
C3004
C3005
R3002
R3032
R3001
C3001
W4401
Q4001
R4005
R4006
Q4002
R4012
Q4003
MK62
MK2
MK7
C3701
MK8
MK64
CL3701
R3708
R3711
C3716
C3717
C3716
C4531
R3936
C3902
R3933
R3932
C3900
C3927
C3926
C3902
C3925
R3935
R3934
R3938
R3937
R4810
R4808
R4809
IC4801
IC4802
C4808
R4811
R4812
R4855
R4813
R4856
R4814
Q4810
Q4811
Q4812
Q4813
R4806
QR4804
R4801
R4804
R4858
LB4101
C4101
C4602
QR4816
QR4805
C4601
C4100
LB4103
QR4802
R4802
R4803
R4860
LB3103
R3909
W760
R3908
LB3102
R3912
LB3104
R3907
LB3101
C4309
R3940
LB3106
C3932
R3922
C2908
R3915
LB3107
R3914
C2090
C2091
C2512
R2515
R2514
R2516
IC3002
C3051
C3043
TL2502
C3016
C3010
W740
C2090
R2092
W731
W730
C3048
C3009
W732
C3007
C3060
C3074
C3017
C3014
C3015
C3019
C3023
C3022
C3024
C3011
R3022
R3021
C3006
C3003
C3004
C3005
R3002
R3032
R3001
C3001
W738
IC3001
W4401
Q4001
R4005
R4006
Q4002
R4012
Q4003
MK62
MK2
S-47


(Foil Side)
3/4
DMR-ES40VP/PC
Main P.C.B.(Foil Side)


IC4801
IC4802
IC4804
IC4803
IC4501
IC7401
IC7402
IC3001
MK1
MK2
MK3
MK4
MK5
MK6
MK63
MK64
TL4501
TL4502
TL4507
W721
W723
W724
W725
W727
W735
W736
W737
W738
W746
W747
W748
W749
W750
W751
W752
W753
W754
W755
W756
LB3106
LB3107
LB3108
LB3110
LB3111
LB4102
LB4104
LB4105
LB4107
LB7403
LB7405
LB7408
LB7409
LB7410
LB7411
LB7412

S5.1.3. Main P.C.B. Address Information

Main P.C.B

Capacitor		
C2001	H-8	F
C2003	K-10	F
C2051	I-16	C
C2053	J-15	C
C2054	G-8	F
C2055	G-8	F
C2099	J-12	F
C2501	L-9	F
C2502	L-13	C
C2504	L-10	F
C2505	L-10	F
C2506	L-10	F
C2507	L-10	F
C2508	K-10	F
C2509	L-13	C
C2510	K-11	F
C2511	K-10	F
C2512	K-11	F
C2513	K-10	F
C2515	L-10	F
C2518	K-10	F
C2519	L-10	F
C2551	K-9	F
C2552	K-10	F
C2561	K-10	F
C2562	F-8	F
C2571	K-10	C
C3001	G-12	F
C3002	H-12	F
C3003	H-12	F
C3004	J-9	C
C3005	G-12	F
C3006	G-12	F
C3007	I-12	F
C3008	I-10	C
C3009	I-12	F
C3010	J-12	F
C3011	H-12	F
C3012	I-10	C
C3013	J-9	C
C3014	H-11	F
C3015	H-11	F
C3016	J-13	F
C3017	H-11	F
C3019	H-11	F
C3020	I-11	C
C3021	H-10	C
C3022	H-11	F
C3023	H-10	F
C3024	G-11	F
C3025	G-10	F
C3026	I-11	C
C3028	F-11	C
C3029	F-11	C
C3030	F-11	F
C3031	F-11	F
C3032	F-11	C
C3033	F-10	F
C3034	E-11	C
C3035	E-11	F
C3036	F-12	C
C3037	F-10	F
C3038	G-10	F
C3039	F-12	C
C3040	G-10	F
C3041	G-10	F
C3043	J-13	F
C3044	F-10	F
C3048	I-12	F
C3050	H-11	F
C3051	J-13	F
C3052	K-9	C
C3053	H-10	F
C3074	H-11	F
C3701	L-6	C
C3702	L-16	F
C3703	L-15	F
C3704	L-7	C
C3705	L-15	F
C3706	L-15	F
C3707	L-7	C
C3708	K-15	F
C3709	K-7	C
C3710	L-15	F
C3711	K-15	F
C3712	K-16	F
C3713	B-15	C
C3717	K-17	F
C3715	K-17	F
C3716	K-17	F
C3717	K-17	F
C3718	K-17	F
C3719	B-15	C
C3719	K-17	F
C3720	K-16	F
C3721	K-16	F
C3722	K-16	F
C3723	K-17	F
C3724	K-17	F
C3725	K-16	F
C3726	M-6	C
C3727	M-5	C
C3728	M-5	C
C3729	M-16	F
C3730	M-5	C
C3731	M-16	F
C3732	L-5	C
C3733	M-5	C
C3734	L-5	C
C3735	L-5	C
C3736	L-17	F
C3737	L-17	F
C3738	L-17	F
C3908	G-17	F
C3918	D-18	F
C3919	E-18	F
C3925	I-16	F
C3926	I-15	F
C3927	I-16	F
C3928	I-6	C
C3932	H-17	F
C3933	E-4	C
C4001	B-16	C
C4004	G-13	F
C4005	G-10	C
C4006	G-9	C
C4007	G-13	F
C4008	G-9	C
C4009	G-9	C
C4010	G-12	F
C4011	G-12	F
C4012	F-10	C
C4013	F-12	F
C4017	G-10	C
C4019	G-9	C
C4081	C-6	F
C4082	C-5	F
C4083	B-16	C
C4084	C-6	F
C4085	C-6	F
C4085	C-6	F
C4101	J-18	F
C4102	F-18	F
C4103	J-18	F
C4104	F-18	F
C4105	G-18	F
C4107	G-18	F
C4109	F-18	F
C4111	F-18	F
C4501	E-9	C
C4502	E-9	C
C4503	E-10	C
C4504	E-9	C
C4505	F-10	C
C4506	F-9	C
C4507	F-10	C
C4508	E-12	F
C4509	E-12	F
C4510	E-12	F
C4511	E-11	F
C4512	E-11	F
C4513	D-11	C
C4514	D-11	C
C4515	D-12	C
C4516	D-11	C
C4517	D-11	C
C4518	E-11	F
C4519	C-5	F
C4520	C-17	C
C4521	D-9	C
C4522	D-11	C
C4523	D-9	C
C4524	D-13	F
C4525	D-9	C
C4526	D-9	C
C4534	F-10	C
C4535	E-11	C
C4535	D-11	C
C4537	D-11	F
C4538	D-13	F
C4773	D-13	F
C4774	D-13	F
C4801	J-18	F
C4802	J-18	F
C4803	H-7	C
C4804	H-7	C
C4805	H-6	C
C4806	G-6	C
C4807	G-6	C
C4808	H-16	F
C4809	H-6	C
C4810	H-6	C
C4811	E-5	C
C4812	F-6	C
C4813	F-6	C
C4814	F-14	F
C4815	K-13	F
C4816	F-5	C
C4817	F-6	C
C4817	F-5	C
C4818	E-6	C
C4819	E-5	C
C4820	E-6	C
C4821	F-16	F
C4822	D-17	F
C4823	E-16	F
C4824	F-16	F
C4826	F-16	F
C4827	E-5	C
C4828	F-16	F
C4829	G-5	C
C4830	G-5	C
C4831	K-18	F
C4832	K-4	C
C4833	D-5	C
C4834	F-15	F
C4836	E-6	C
C4837	F-7	C
C4838	E-5	C
C4839	E-6	C
C4840	F-6	C
C4841	D-17	F
C4842	F-7	C
C4843	E-6	C
C4844	E-6	C
C5001	F-12	F
C5002	F-12	F
C5003	F-12	F
C5004	F-12	F
C5005	F-11	F
C5006	F-10	C
C5007	F-11	F
C5008	E-11	F
C6001	F-6	F
C6002	F-6	F
C6005	I-16	C
C6006	F-7	F
C6007	F-7	F
C6008	F-7	F
C6009	E-7	F
C6010	F-8	F
C6011	F-8	F
C6012	H-7	F
C6014	F-7	F
C6015	E-7	F
C6016	F-7	F
C6018	F-6	F
C6019	F-6	F
C6020	E-5	F
C6101	F-7	F
C6102	E-8	F
C6103	E-7	F
C6104	E-6	F
C6201	F-6	F
C6301	D-6	F
C6302	D-6	F
C6303	D-16	C
C6308	K-13	C
C7031	B-16	C
C7302	C-7	F
C7303	B-7	F
C7304	C-7	F
C7305	C-7	F
C7306	B-14	C
C7307	B-14	C
C7308	B-14	C
C7309	B-7	F
C7310	B-7	F
C7311	B-7	F
C7312	C-8	F
C7314	B-15	C
C7315	B-14	C
C7316	B-8	F
C7316	B-8	F
C7317	B-8	F
C7318	B-14	C
C7320	B-7	F
C7321	B-11	C
C7322	B-11	C
C7401	C-6	C
C7403	C-17	F
C7404	C-4	C
C7405	B-17	F
C7406	B-17	F
C7407	C-17	F
C7408	C-17	F
C7419	B-16	F
C7420	B-16	F
C7421	C-5	C
C7422	B-17	F
C7423	B-16	F
C7432	C-17	F
C7433	B-18	F
C7434	C-17	F
C7435	D-15	F
C7436	D-15	F
C7437	K-15	F
C7501	K-5	F
C7502	K-5	F
C7503	K-5	F
C7504	F-18	C
C7505	H-4	F
C7506	H-4	F
C7507	I-5	F
C7508	I-5	F
C7509	I-5	F
C7510	J-5	F
C7511	J-5	F
C7512	J-5	F
C7513	J-5	F
C7515	J-6	F
C7516	L-6	F
C7517	H-5	F
C7518	J-5	F
C7538	F-18	C
C7539	M-15	C
C7540	K-6	F
CL3701	J-16	F
CL6011	F-7	F
CL6012	F-9	F
CL6021	F-8	F
CL6022	F-8	F
CL6023	F-8	F
CL6024	F-8	F
CL6025	F-7	F
CL6026	G-6	F
CL6027	G-7	F
CL6028	H-7	F
CL6029	G-7	F
CL6030	F-6	F
CL6031	F-7	F
CL7506	I-4	F
CL7507	M-4	F

Diode		
D1501	H-14	C
D2001	H-14	C
D2002	I-14	C
D2502	L-11	C
D3001	J-9	C
D3002	J-9	C
D4501	E-11	C
D4502	C-17	C
D6001	E-18	C
D6306	D-16	C
D7401	C-6	C
D7501	K-16	C
D7502	I-17	C
D7751	E-18	C
DP7501	J-18	C

Fuse		
F7502	L-5	F

Filter		
FL7301	B-12	C

Integrated Circuit		
IC1511	I-16	C
IC1512	E-16	C
IC2501	L-10	F
IC3001	G-11	F
IC3002	K-13	F
IC3701	K-16	F
IC3902	I-16	F
IC4501	B-18	F
IC4801	H-16	F
IC4802	H-16	F
IC4803	D-17	F
IC4804	F-16	F
IC6001	G-7	F
IC6201	F-6	F
IC6301	K-9	F
IC7301	B-7	F
IC7401	C-17	F
IC7402	C-17	F
IC7501	K-5	F
IC7502	L-6	F
IP6001	D-6	F

Earth Wire		
J1	I-9	C

Connector		
JK3902	I-4	C
JK3903	E-4	C
JK4801	K-4	C

Coil		
L3002	G-10	C
L3003	I-11	C
L3004	G-12	C
L3005	F-12	C
L3006	F-10	F
L3701	M-7	C
L3702	J-7	C
L4061	B-16	C
L4501	D-12	C
L4502	E-11	C
L4503	C-8	C
L4601	E-11	C
L5001	E-11	C
L6001	F-6	F
L6101	E-15	C
L6102	F-15	C
L6801	K-4	C
L7301	B-15	C
L7401	J-8	C
L7402	C-5	C
LB3101	H-18	F
LB3102	I-18	F
LB3103	I-18	F
LB3104	I-18	F
LB3105	E-18	F
LB3106	H-18	F
LB3107	G-18	F
LB3108	E-18	F
LB3110	D-18	F
LB3111	D-18	F
LB4101	J-18	F
LB4102	F-18	F
LB4103	I-18	F
LB4104	F-18	F
LB4105	G-18	F
LB4107	F-18	F
LB7403	B-17	F
LB7405	C-17	F
LB7407	C-17	F
LB7408	B-18	F
LB7409	B-18	F
LB7410	B-18	F
LB7411	B-18	F
LB7412	B-17	F
LB7505	L-5	F

Test Point		
MK1	F-7	F
MK10	K-5	F
MK2	G-7	F
MK3	G-11	F
MK4	G-11	F
MK5	D-12	F
MK57	M-8	F
MK58	I-9	F
MK59	G-10	F
MK6	D-12	F
MK60	B-9	F
MK62	H-13	F
MK64	G-15	F
MK7	L-16	F
MK8	K-16	F
MK9	K-5	F
TL1002	C-5	F
TL2015	H-8	F
TL23	I-6	F
TL24	E-6	F
TL2502	J-10	F
TL4501	C-11	F
TL4502	C-11	F
TL4507	E-11	F
TL6001	K-9	F
TL6002	M-7	F
TL6004	F-6	F
TL6010	G-6	F
TL7503	K-5	F
TL7504	L-5	F

Connector		
P1531	M-10	C
P2501	K-10	C
P2571	K-11	C
P3001	F-10	C
P4001	C-12	C
P4002	J-10	C
P6001	M-7	C
P6002	M-8	C
P6003	M-10	C
P7501	H-18	C
P7502	M-18	C
PH7501	H-18	C
PS6002	C-18	C

Transistor		
Q1501	M-13	C
Q1502	B-13	C
Q3001	E-10	F
Q3002	J-8	C
Q3003	J-8	C
Q3004	H-10	F
Q3901	I-16	F
Q3902	I-16	F
Q4001	H-13	F
Q4002	G-13	F
Q4081	C-16	C
Q4084	C-6	F
Q4501	C-14	F
Q4502	C-17	C
Q4801	F-17	F
Q4801	G-18	F
Q4802	F-18	F
Q6305	D-6	F
Q7401	C-15	F
Q7402	C-17	F
Q7501	M-5	F

Transistor-resistor		
QR4001	G-13	F
QR4082	C-6	F
QR4501	C-15	F
QR4802	I-17	F
QR4803	F-18	F
QR4804	J-18	F
QR4805	J-18	F
QR4806	J-18	F
QR4807	F-18	F
QR4810	G-15	F
QR4811	G-16	F
QR4812	G-17	F
QR4813	G-17	F
QR4816	J-17	F
QR6801	J-7	F
QR7401	C-17	F
QR7501	L-5	F
QR7503	L-5	F

Resistor		
R1501	H-7	F
R1503	H-14	C
R1511	E-6	F
R1512	I-7	F
R1513	I-7	F
R2001	K-10	F
R2002	H-8	F
R2099	I-12	F
R2501	K-10	F
R2502	K-10	F
R2503	K-12	C
R2514	K-10	F
R2515	K-10	F
R2516	K-11	F
R2520	K-10	F
R2521	K-10	F
R2551	F-8	F
R2552	K-9	F
R2561	F-8	F
R2562	J-10	F
R2563	G-8	F
R2564	K-10	F
R2565	K-10	F
R3001	G-12	F
R3002	G-12	F
R3003	J-8	C
R3006	K-10	C
R3009	F-11	F
R3011	F-11	F
R3012	F-11	F
R3013	F-11	F
R3014	F-11	F
R3016	G-10	F
R3017	E-10	F
R3021	H-12	F
R3022	H-12	F
R3023	I-10	F
R3030	H-10	F
R3031	I-10	F
R3032	G-12	F
R3035	F-11	F
R3046	E-10	F
R3047	E-10	F
R3701	L-15	F
R3702	L-16	F
R3703	K-15	F
R3704	K-15	F
R3707	K-15	F
R3708	K-16	F
R3710	K-17	F
R3711	K-17	F
R3907	H-18	F
R3908	I-18	F
R3909	I-18	F
R3912	I-18	F
R3913	E-18	F
R3914	G-18	F
R3915	G-17	F
R3922	G-17	F
R3924	E-18	F
R3926	D-18	F
R3928	D-18	F
R3929	D-17	F
R3932	I-16	F
R3933	I-16	F
R3934	I-16	F
R3935	I-16	F
R3936	I-16	F
R3937	I-16	F
R3938	I-16	F
R3939	H-17	F
R3940	H-17	F
R4001	H-13	F
R4003	F-13	F
R4004	G-12	F
R4005	G-13	F
R4006	G-13	F
R4007	G-12	F
R4008	G-12	F
R4009	C-6	F
R4011	F-13	F
R4012	G-13	F
R4081	C-6	F
R4081	C-6	F
R4086	C-6	F
R4087	C-6	F
R4500	E-11	F
R4501	D-13	F
R4502	E-12	F
R4503	E-12	F
R4504	C-17	C
R4505	E-12	F
R4506	E-12	F
R4507	C-14	F
R4508	D-10	F
R4509	F-13	F
R4510	F-13	F
R4511	F-13	F
R4512	F-12	F
R4513	C-15	F
R4515	D-13	F
R4518	E-13	F
R4519	E-13	F
R4520	F-12	F
R4521	E-12	F
R4522	D-11	F
R4525	D-11	F
R4526	D-13	F
R4527	D-13	F
R4529	E-11	F
R4534	E-11	F
R4538	D-11	F
R4539	C-11	F
R4540	C-11	F
R4553	E-12	F
R4557	E-13	F
R4802	I-17	F
R4803	I-17	F
R4804	J-18	F
R4805	F-18	F
R4807	F-17	F
R4808	H-16	F
R4809	H-16	F
R4810	H-16	F
R4811	G-16	F
R4812	G-15	F
R4813	G-16	F
R4814	G-15	F
R4815	G-16	F
R4816	G-17	F
R4817	F-16	F
R4818	F-16	F
R4819	E-17	F
R4820	E-16	F
R4821	E-17	F
R4822	G-17	F
R4823	F-18	F
R4824	E-17	F
R4825	F-17	F
R4826	F-16	F
R4827	F-16	F
R4829	F-16	F
R4830	F-16	F
R4832	E-15	F
R4833	E-15	F
R4834	F-16	F
R4835	F-15	F
R4836	E-15	F
R4840	F-18	F
R4855	G-16	F
R4856	G-16	F
R4858	J-18	F
R4859	G-18	F
R4860	I-18	F
R4861	F-18	F
R4862	F-18	F
R4863	F-18	F
R6001	F-7	F
R6002	F-6	F
R6004	G-6	F
R6006	I-6	F
R6007	H-7	F
R6008	G-6	F
R6009	E-8	F
R6010	E-8	F
R6011	H-7	F
R6012	F-8	F
R6013	F-8	F
R6014	H-7	F
R6015	D-5	F
R6017	F-7	F
R6018	E-7	F
R6019	H-7	F
R6020	G-7	F
R6022	F-8	F
R6023	F-8	F
R6024	G-7	F
R6026	F-8	F
R6027	F-8	F
R6028	F-8	F
R6029	F-8	F
R6101	E-7	F
R6102	E-7	F
R6103	E-7	F
R6201	F-6	F
R6309	D-6	F
R6801	I-7	F
R6802	I-7	F
R6803	H-8	F
R7301	B-7	F
R7303	B-7	F
R7305	B-8	F
R7306	B-8	F
R7307	B-7	F
R7309	B-8	F
R7310	B-10	F
R7311	B-9	F
R7401	C-6	C
R7403	C-17	F
R7404	C-17	F
R7405	C-17	F
R7406	C-17	F
R7407	D-17	F
R7408	D-17	F
R7409	D-17	F
R7410	B-16	F
R7411	B-16	F
R7415	C-16	F
R7416	D-17	F
R7417	C-15	F
R7418	C-15	F
R7501	K-5	F
R7503	L-5	F
R7504	I-4	F
R7505	I-5	F
R7506	I-5	F
R7507	M-17	C
R7508	I-18	C
R7509	G-4	F
R7510	J-5	F
R7511	I-5	F
R7512	I-5	F
R7513	J-5	F
R7514	J-5	F
R7515	J-5	F
R7516	J-5	F
R7517	J-5	F
R7518	K-4	F
R7519	K-5	F
R7520	L-5	F
R7521	G-4	F
R7522	G-4	F
R7524	J-4	F
R7527	L-5	F
R7528	K-5	F
R7529	K-5	F
R7530	J-5	F
R7537	K-5	F
R7538	K-4	F
R7539	K-4	F
R7540	K-4	F
R7541	K-4	F
R7542	K-4	F
R7543	L-5	F
R7554	L-5	F
R7556	K-6	F
R7561	J-6	F
R7562	J-4	F
R7563	J-4	F
R7564	J-4	F
R7565	J-4	F

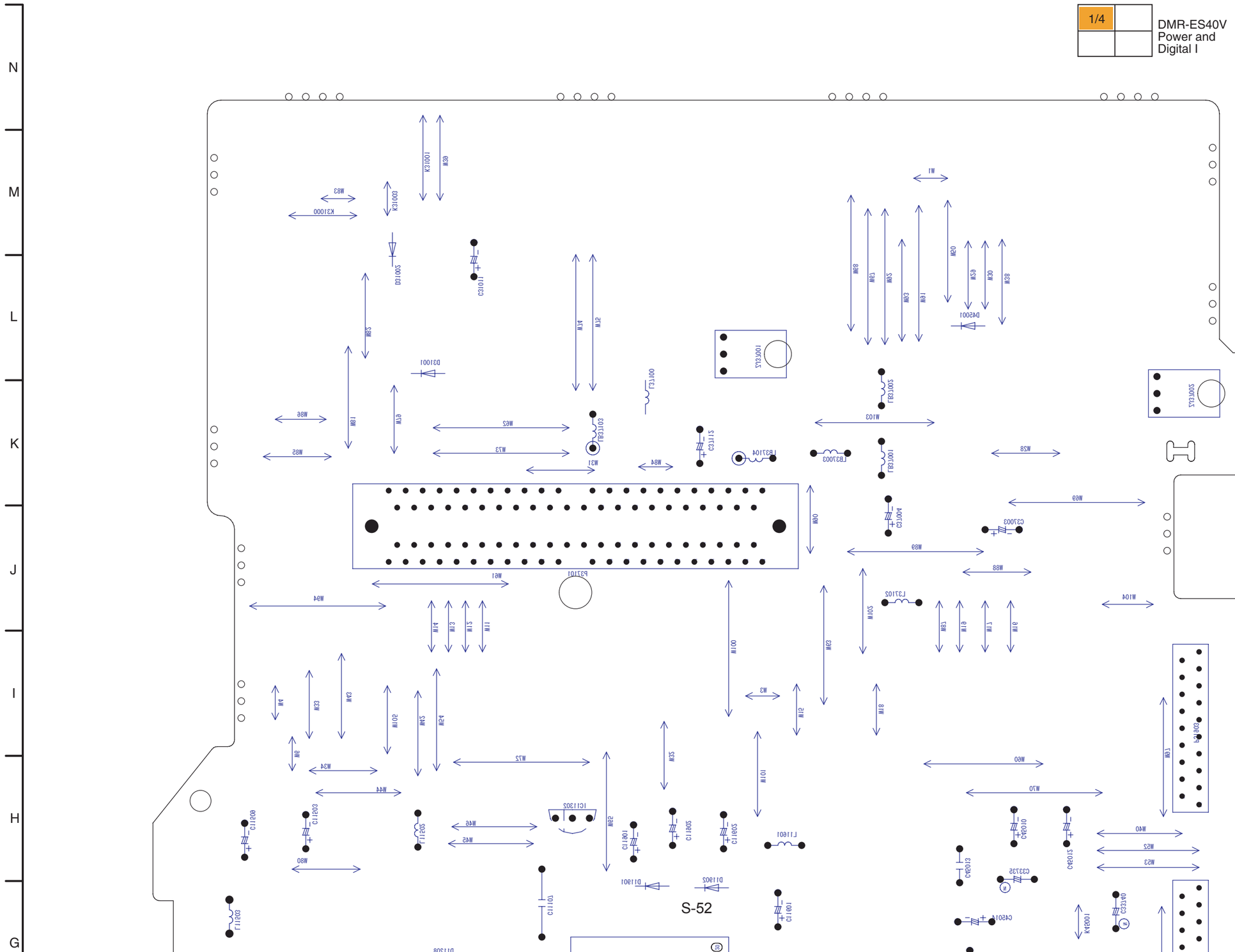
Switch		
S1531	D-17	C
S1532	K-15	C

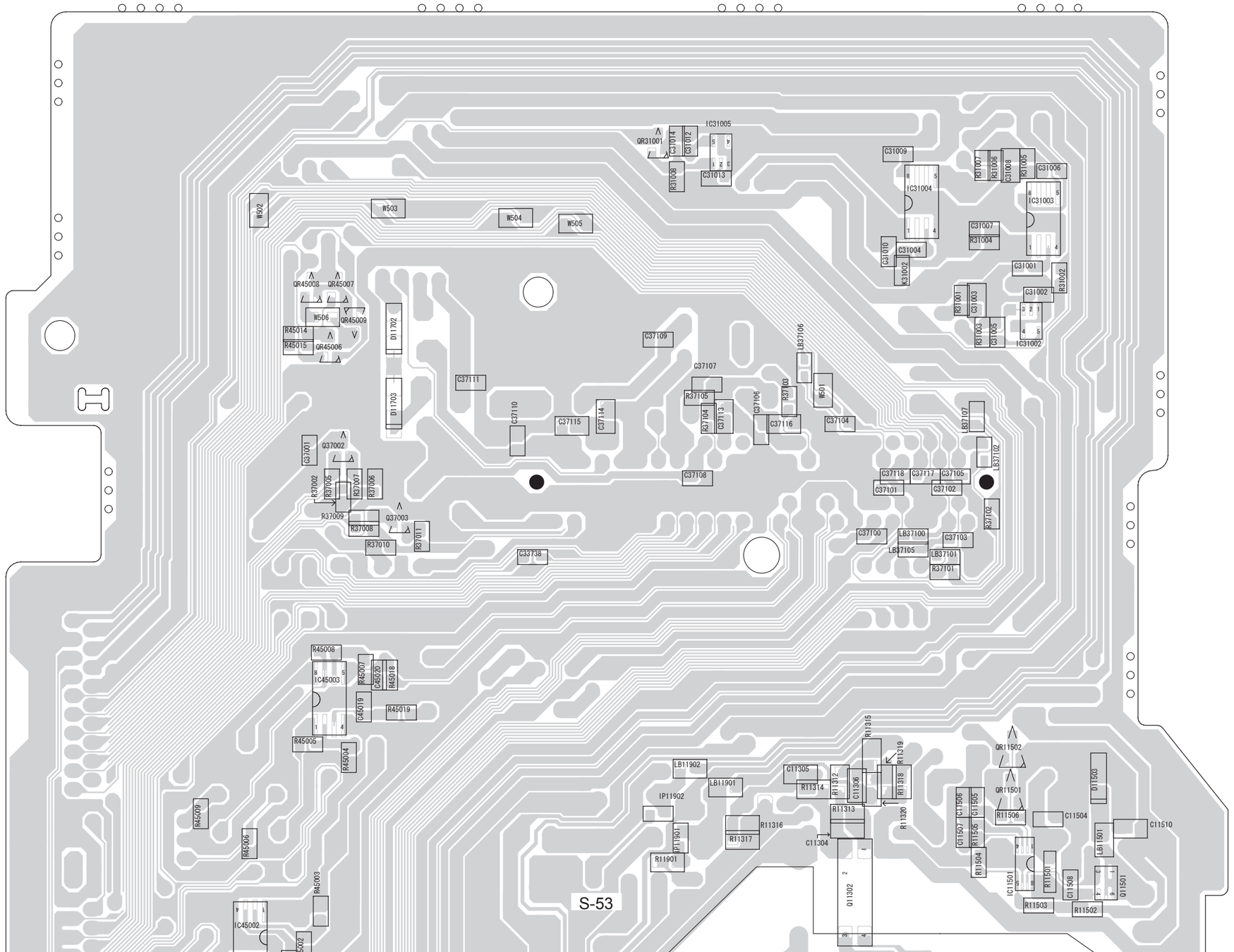
Tuner Unit		
TU7401	B-5	C

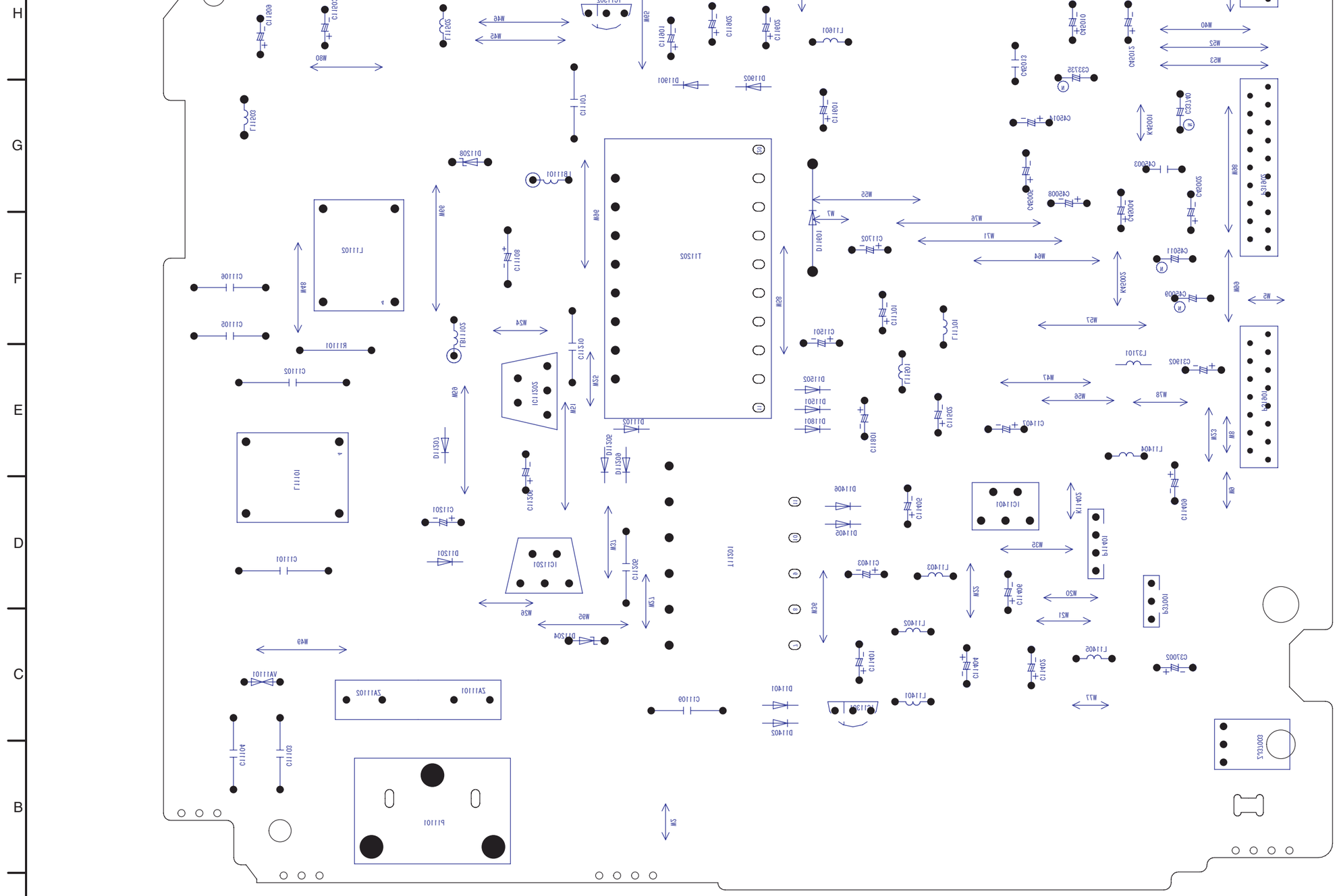
Crystal Osillator		
X3002	F-11	C
X6001	F-16	C
X7501	J-17	C
X7502	J-17	C

Address Information
C.....Component Side
F.....Foil Side

S5.2. Power and Digital I/F P.C.B.



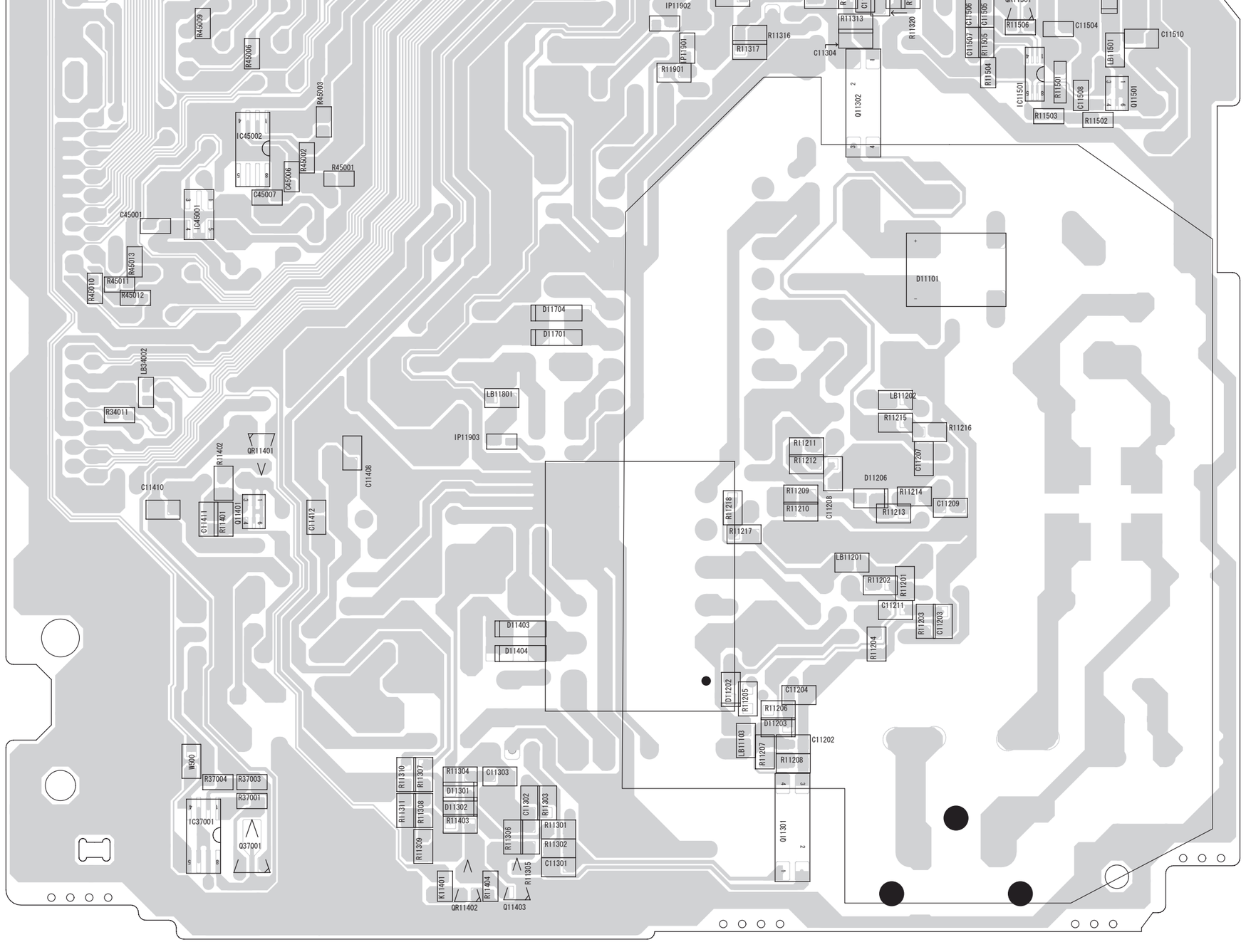

W502
W503
W504
W505
W506
QR45008
QR45007
QR45009
QR45006
R45014
R45015
D11702
D11703
C37111
C37110
C37115
C37114
C37109
C37107
R37105
R37104
C37113
R37103
C37106
C37116
W501
C37104
LB37107
LB37102
R37102
C37108
C37118
C37117
C37105
C37101
C37102
C37100
LB37100
LB37105
C37103
LB37101
R37101
C33738
IC31005
QR31001
C31014
C31012
R31008
C31013
C31009
IC31004
C31010
C31004
K31002
R31007
R31006
C31008
R31005
C31006
IC31003
C31007
R31004
C31001
R31002
C31002
R31001
C31003
R31003
C31005
IC31002
Q37002
Q37001
R37002
R37005
R37007
R37006
R37009
Q37003
R37008
R37011
R37010
R45008
IC45003
R45007
C45020
R45018
C45019
R45019
R45005
R45004
R45009
R45006
R45003
IC45002
C45002
LB11902
LB11901
IP11902
IP11901
R11901
R11316
R11317
C11304
R11315
R11319
C11305
R11312
R11314
C11306
R11318
R11313
R11320
Q11302
QR11502
QR11501
D11503
C11507
C11508
C11505
C11506
R11506
C11504
C11510
R11504
IC11501
R11501
C11508
LB11501
Q11501
R11503
R11502
S-53



(Component Side)

DMR-ES40V
Power and
Digital I

3/4

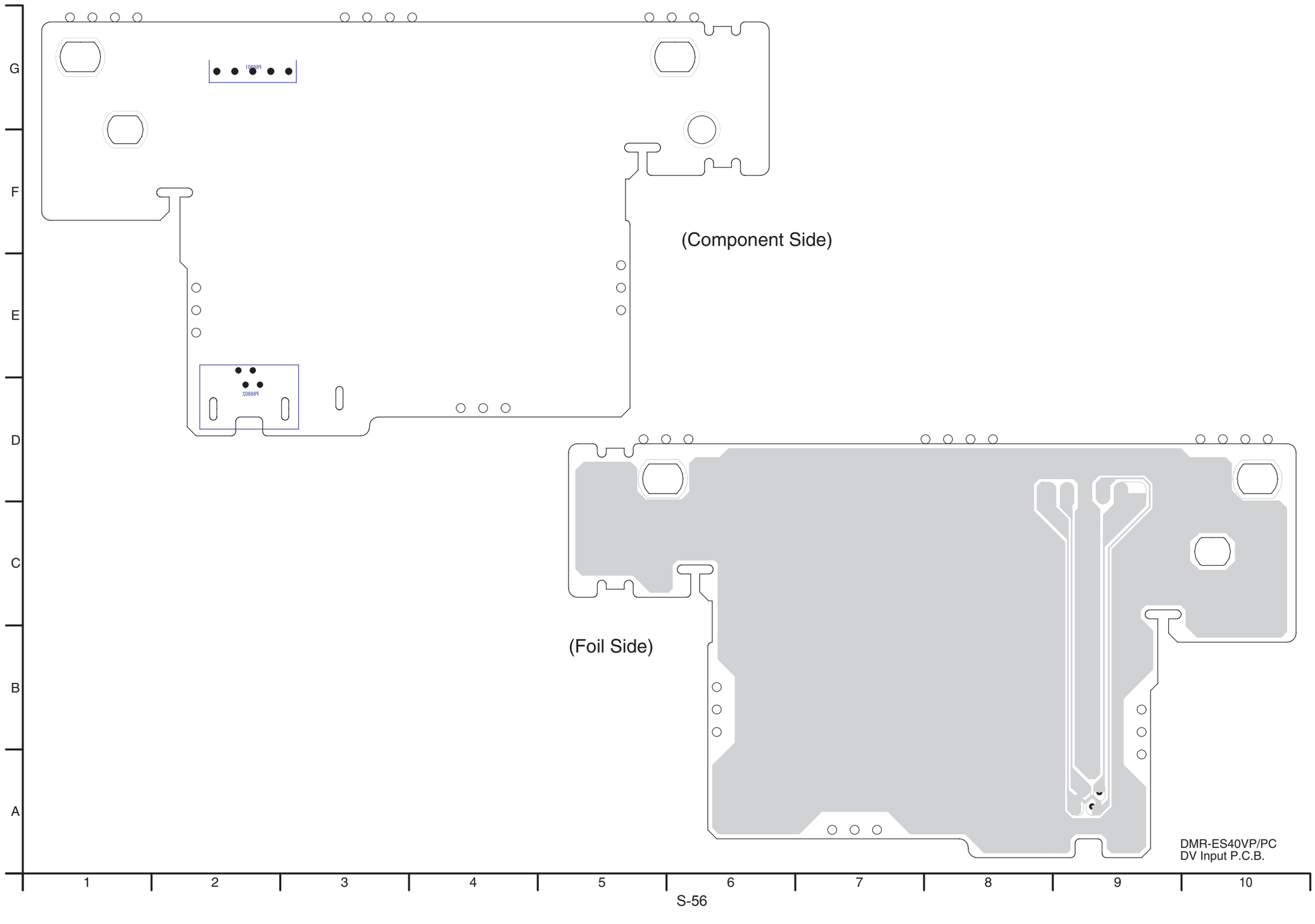


(Foil Side)

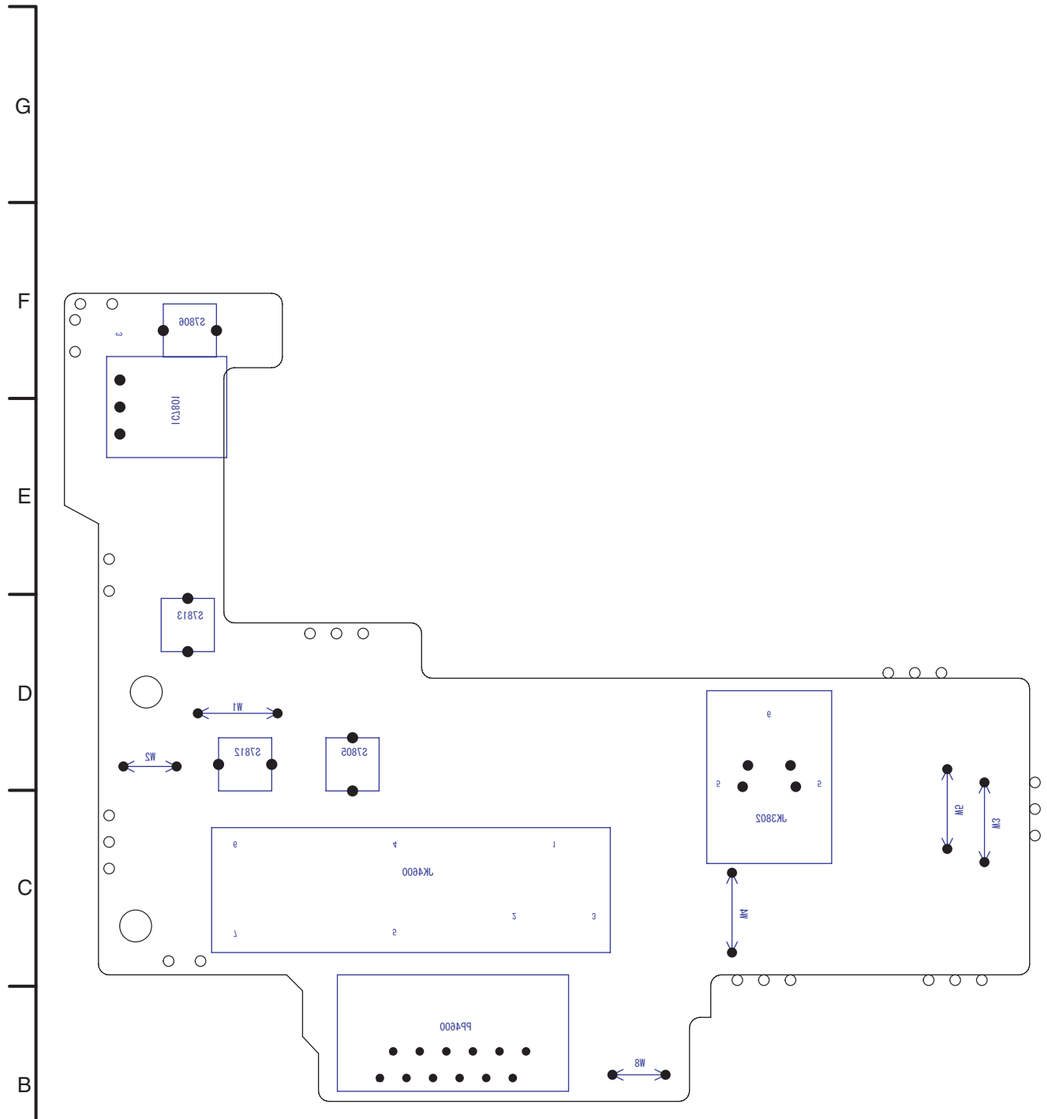
DMR-ES40V
Power and
Digital I
4/4

11 12 13 14 15 16 17 18 19 20 21

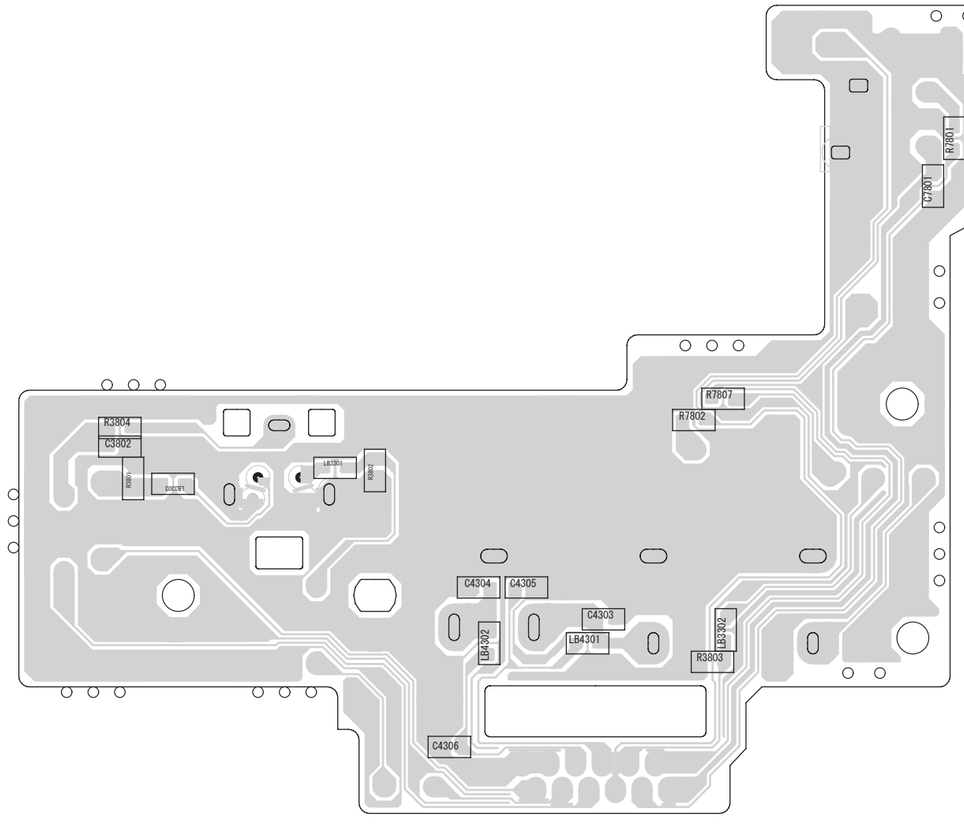
S5.3. DV Input P.C.B.



S5.4. Front Jack P.C.B



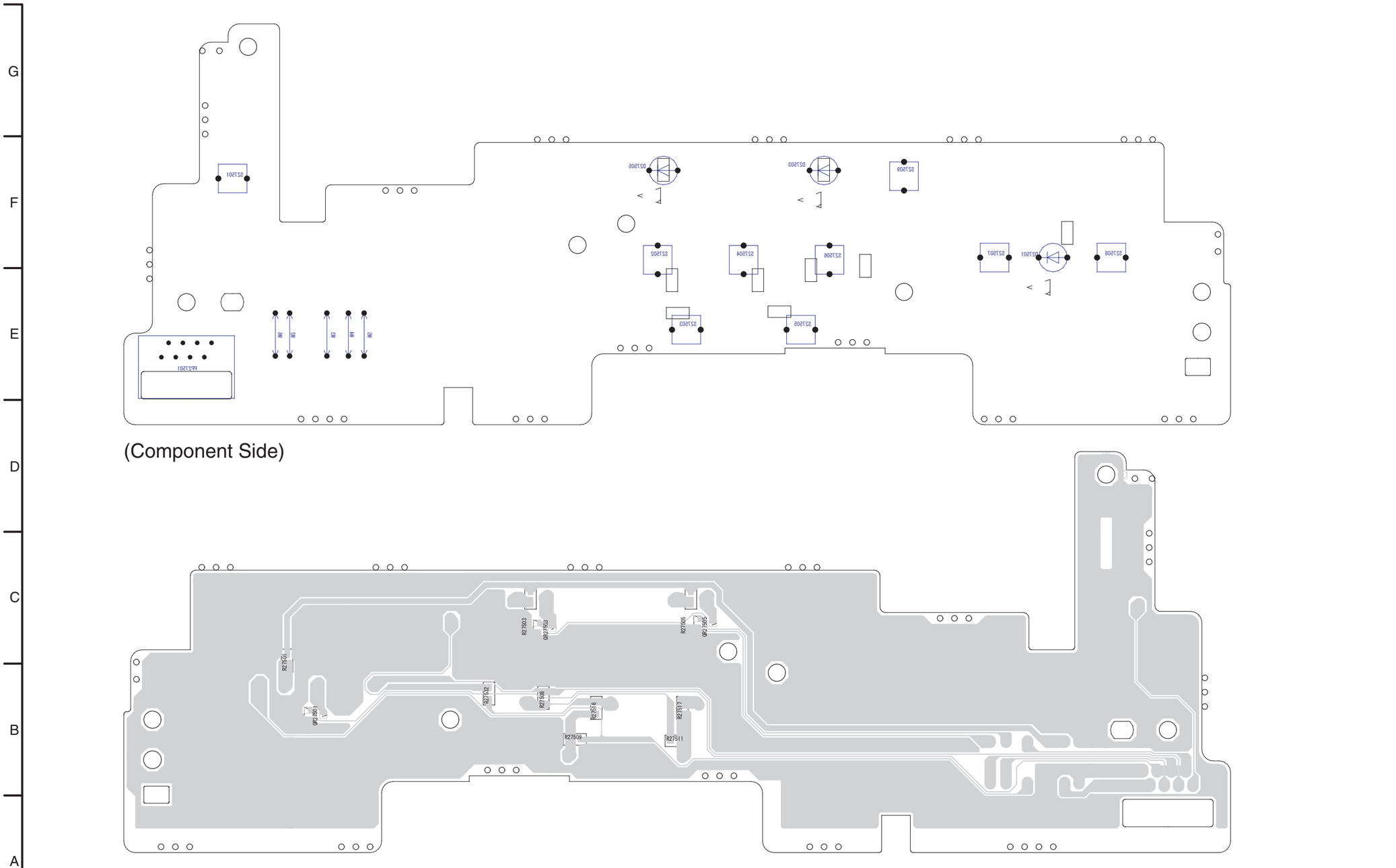
(Component Side)



(Foil Side)

DMR-ES40VP/PC
Front Jack P.C.B.

S5.5. FL Drive P.C.B.



DMR-ES40VP/PC
FL Drive P.C.B.

S6. Replacement Parts List

Note: 1.* Be sure to make your orders of replacement parts according to this list.

2. IMPORTANT SAFETY NOTICE
   - Components identified with the mark ⚠ have the special characteristics for safety.
   - When replacing any of these components, use only the same type.
3. Unless otherwise specified,
   - All resistors are in OHMS, K=1,000 OHMS. All capacitors are in MICRO-FARADS (uf), P=uuF.
4. The marking (RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

E.S.D. standerds for Electrostatically Sensitive Devices, refer to "PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section.

Definition of Parts supplier:

1. **Parts marked with [PAVC-CSG] in the remarks column are supplied from PAVC COMPANY CS Group (PAVC-CSG).**

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
■	02	VEP06F99A	1	(MAIN P.C.B.)
C2001	ECJ1VC1H330J	50V 33P	1	
C2003	ECJ1VF1A105Z	10V 1U	1	
C2051	ECEA0JKN220B	6.3V 22U	1	
C2053	ECEA1CKS100B	16V 10U	1	
C2054	F1H1H392A013	50V 3900	1	
C2055	F1H1C104A008	16V 0.1U	1	
C2099	ECJ1VC1H681J	50V 680P	1	
C2501	F1H1C104A008	16V 0.1U	1	
C2502	ECEA0JKA221B	6.3V 220U	1	
C2504	F1H1E223A002	25V 0.022U	1	
C2505	F1H1E223A002	25V 0.022U	1	
C2506	ECJ1VB1A224K	10V 0.22U	1	
C2507	F1H1H102A219	50V 1000P	1	
C2508	ECJ1VB1H182K	50V 1800P	1	
C2509	ECEA1CKA220B	16V 22U	1	
C2510	F1H1C104A041	16V 0.1U	1	
C2511	F1H1C104A041	16V 0.1U	1	
C2512	F1H1C104A041	16V 0.1U	1	
C2513	ECJ1VF1A105Z	10V 1U	1	
C2515	F1H1H103A220	50V 0.01U	1	
C2518	F1H1H103A220	50V 0.01U	1	
C2519	F1H1H103A220	50V 0.01U	1	
C2551	ECJ1VB1C563K	16V 0.056U	1	
C2552	ECJ1VB1C563K	16V 0.056U	1	
C2561	ECJ1VB1C563K	16V 0.056U	1	
C2562	ECJ1VB1C563K	16V 0.056U	1	
C2571	ECA1VM221B	35V 220U	1	
C3001	ECJ1VC1H151J	50V 150P	1	
C3002	F1H1C104A041	16V 0.1U	1	
C3003	F1H1C104A041	16V 0.1U	1	
C3004	ECEA1CKA100B	16V 10U	1	
C3005	ECJ1VC1H220J	50V 22P	1	
C3006	F1H1C104A041	16V 0.1U	1	
C3007	F1H0J1050010	6.3V 1U	1	
C3008	F2A1H4R7A234	50V 4.7U	1	
C3009	F1H0J1050010	6.3V 1U	1	
C3010	F1H0J1050010	6.3V 1U	1	
C3011	F1H1C104A041	16V 0.1U	1	
C3012	F2A0J470A245	6.3V 47U	1	
C3013	ECEA1CKA100B	16V 10U	1	
C3014	F1H1C104A041	16V 0.1U	1	
C3015	F1H0J1050010	6.3V 1U	1	
C3016	F1H1C104A041	16V 0.1U	1	
C3017	F1H1C104A041	16V 0.1U	1	
C3019	F1H1C104A041	16V 0.1U	1	
C3020	F2A1H3R3A234	50V 3.3U	1	
C3021	F2A1V100A184	35V 10U	1	
C3023	F1H1H103A219	50V 0.01U	1	
C3024	ECJ1VC1H331J	50V 330P	1	
C3025	F1H1H103A220	50V 0.01U	1	
C3028	F2A1H4R7A234	50V 4.7U	1	
C3029	F2A1HR47A234	50V 47U	1	
C3030	F1H1E223A002	25V 0.022U	1	
C3031	F1H1C333A071	16V 0.033U	1	
C3032	F2A1H4R7A234	50V 4.7U	1	
C3033	F1H1C104A041	16V 0.1U	1	
C3034	F2A1H2R2A234	50V 2.2U	1	
C3035	ECJ1VB1H472K	50V 4700P	1	
C3036	F2A0J470A245	6.3V 47U	1	
C3037	F1H1C104A041	16V 0.1U	1	
C3038	ECJ1VC1H040C	50V 40P	1	
C3039	F2A1H1R0A234	50V 1U	1	
C3040	F1H1H103A220	50V 0.01U	1	
C3041	F1H1H103A220	50V 0.01U	1	
C3044	F1H1C104A041	16V 0.1U	1	
C3048	F1H1H103A219	50V 0.01U	1	
C3050	F1H1C104A041	16V 0.1U	1	
C3052	ECEA1CKA100B	16V 10U	1	
C3053	F1H1C104A041	16V 0.1U	1	
C3074	F1H1C104A041	16V 0.1U	1	
C3701	ECEA0JKA470B	6.3V 47U	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C3702	F1H1H103A219	50V 0.01U	1	
C3703	F1H1C104A008	16V 0.1U	1	
C3704	ECEA1CKA100B	6.3V 22U	1	
C3705	F1H1C104A008	16V 0.1U	1	
C3706	F1H1C104A008	16V 0.1U	1	
C3707	ECEA0JKA220B	6.3V 22U	1	
C3708	F1H1C333A071	16V 0.033U	1	
C3709	ECEA0JKA470B	6.3V 47U	1	
C3710	F1H1C104A041	16V 0.1U	1	
C3711	F1H1C104A041	16V 0.1U	1	
C3712	F1H1C104A041	16V 0.1U	1	
C3713	F1H1H103A220	50V 0.01U	1	
C3715	F1H1H103A220	50V 0.01U	1	
C3716	F1H1H103A219	50V 0.01U	1	
C3717	F1H1H103A219	50V 0.01U	1	
C3718	F1H1H103A219	50V 0.01U	1	
C3719	F1H1H103A219	50V 0.01U	1	
C3720	F1H1H103A219	50V 0.01U	1	
C3721	F1H1H103A219	50V 0.01U	1	
C3722	F1H1H103A219	50V 0.01U	1	
C3723	F1H1H103A220	50V 0.01U	1	
C3724	F1H1H103A220	50V 0.01U	1	
C3726	ECA0JM471B	6.3V 470U	1	
C3727	ECEA0JKA470B	6.3V 47U	1	
C3728	ECA0JM331B	6.3V 330U	1	
C3729	F1H0J1050010	6.3V 1U	1	
C3730	ECA0JM331B	6.3V 330U	1	
C3731	F1H0J1050010	6.3V 1U	1	
C3732	ECEA0JKA470B	6.3V 47U	1	
C3733	ECA0JM471B	6.3V 470U	1	
C3734	ECEA0JKA470B	6.3V 47U	1	
C3735	ECA0JM471B	6.3V 470U	1	
C3736	F1H1H103A220	50V 0.01U	1	
C3737	F1H1H103A220	50V 0.01U	1	
C3738	F1H1H103A220	50V 0.01U	1	
C3908	F1H1H103A220	50V 0.01U	1	
C3918	F1H1C104A008	16V 0.1U	1	
C3919	F1H1H103A220	50V 0.01U	1	
C3925	F1H0J1050010	6.3V 1U	1	
C3926	F1H0J1050010	6.3V 1U	1	
C3927	F1H1C104A041	16V 0.1U	1	
C3928	F2A0J101A245	6.3V 100U	1	
C3932	F1H1H103A220	50V 0.01U	1	
C3933	F2A0J471A247	6.3V 470U	1	
C4001	ECQB1H333JF3	50V 0.033U	1	
C4004	ECJ1VB1H182K	50V 1800P	1	
C4005	ECEA0JKA220B	6.3V 22U	1	
C4006	ECEA1HKA4R7B	50V 4.7U	1	
C4007	ECJ1VB1H182K	50V 1800P	1	
C4008	ECEA1HKA3R3B	50V 3U	1	
C4009	ECEA0JKA330B	6.3V 33U	1	
C4011	F1H1H103A219	50V 0.01U	1	
C4012	ECEA1HKA4R7B	50V 4.7U	1	
C4013	F1H1H103A220	50V 0.01U	1	
C4017	ECEA1CKA100B	16V 10U	1	
C4019	ECEA1CKA100B	16V 10U	1	
C4081	F1H1C223A001	16V 0.023U	1	
C4082	F1H1H471A219	50V 470P	1	
C4083	ECEA0JKA470B	6.3V 47U	1	
C4084	ECJ1VB1H182K	50V 1800P	1	
C4501	ECQB1H473JF3	50V 0.047U	1	
C4502	ECEA1CKA100B	16V 10U	1	
C4503	ECEA1CKA100B	16V 10U	1	
C4504	ECEA1CKA100B	16V 10U	1	
C4505	ECEA0JKA330B	6.3V 33U	1	
C4506	ECEA1CKA100B	16V 10U	1	
C4507	ECEA0JKA220B	6.3V 22U	1	
C4508	F1H1C333A071	16V 0.033U	1	
C4509	F1H1H103A220	50V 0.01U	1	
C4510	F1H1H103A220	50V 0.01U	1	
C4511	F1H1C104A041	16V 0.1U	1	
C4512	ECJ1VB1A224K	10V 0.22U	1	
C4513	ECEA0JKA220B	6.3V 22U	1	
C4514	ECEA1CKA100B	16V 10U	1	
C4515	ECEA0JKA330B	6.3V 33U	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C4516	ECEA1CKA100B	16V 10U	1	
C4517	ECEA0JKA220B	6.3V 22U	1	
C4518	F1H1H103A220	50V 0.01U	1	
C4519	F1H1C104A008	16V 0.1U	1	
C4520	ECEA0JKA220B	6.3V 22U	1	
C4521	ECEA1CKA100B	16V 10U	1	
C4522	ECQB1H473JF3	50V 0.047U	1	
C4523	ECEA0JKA220B	6.3V 22U	1	
C4524	F1H1C104A041	16V 0.1U	1	
C4525	ECEA1CKA101B	16V 100U	1	
C4526	ECEA1CKA100B	16V 10U	1	
C4534	ECQB1H153JF3	50V 0.015U	1	
C4535	ECQB1H153JF3	50V 0.015U	1	
C4537	ECJ2VC1H560G	50V 56P	1	
C4538	F1H1H103A220	50V 0.01U	1	
C4773	ERJ3GEYJ682V	1/10W 6.8K	1	
C4774	ERJ3GEYJ682V	1/10W 6.8K	1	
C4801	ECJ1VC1H102J	50V 1000P	1	
C4802	ECJ1VC1H102J	50V 1000P	1	
C4803	ECEA1CKA100B	16V 10U	1	
C4804	ECEA1CKA100B	16V 10U	1	
C4805	ECEA1CKA100B	16V 10U	1	
C4806	ECEA1CKA100B	16V 10U	1	
C4807	ECA1CM221B	16V 220U	1	
C4808	F1H1H103A220	50V 0.01U	1	
C4809	ECEA1CKA100B	16V 10U	1	
C4810	ECEA1CKA100B	16V 10U	1	
C4811	F2A1H4R7A234	50V 4.7U	1	
C4812	F2A1V100A184	35V 10U	1	
C4813	F2A1V100A184	35V 10U	1	
C4816	F2A1H1R0A236	50V 1U	1	
C4817	F2A1H1R0A236	50V 1U	1	
C4818	F2A1H1R0A236	50V 1U	1	
C4819	F2A1C221A019	16V 220U	1	
C4820	F2A1H1R0A236	50V 1U	1	
C4821	ECJ1VC1H820J	50V 82P	1	
C4822	F1H1C104A008	16V 0.1U	1	
C4823	F1H1H103A219	50V 0.01U	1	
C4828	ECJ1VC1H820J	50V 82P	1	
C4829	ECEA1CKA100B	16V 10U	1	
C4830	ECEA1CKA100B	16V 10U	1	
C4831	F1H1C104A008	16V 0.1U	1	
C4832	F2A0J470A599	6.3V 47U	1	
C4833	ECQV1H104JL3	50V 0.1U	1	
C4834	F1H1C104A008	16V 0.1U	1	
C4835	F1H1C104A008	16V 0.1U	1	
C4836	F2A1H1R0A236	50V 1U	1	
C4837	F2A1C471A236	16V 470U	1	
C4838	F2A1C471A236	16V 470U	1	
C4839	F2A1H1R0A236	50V 1U	1	
C4840	F2A1H1R0A236	50V 1U	1	
C4841	F1H1C104A008	16V 0.1U	1	
C4842	F2A1H1R0A236	50V 1U	1	
C5001	F1H1H103A219	50V 0.01U	1	
C5002	F1H1H103A219	50V 0.01U	1	
C5003	F1H1H103A219	50V 0.01U	1	
C5004	F1H1H103A219	50V 0.01U	1	
C5005	F1H1C104A041	16V 0.1U	1	
C5006	F2A0J101A245	6.3V 100U	1	
C5007	F1H1C104A008	16V 0.1U	1	
C5008	F1H0J1050010	6.3V 1U	1	
C6001	ECJ1VC1H180J	50V 18P	1	
C6002	ECJ1VC1H220J	50V 22P	1	
C6005	ECEA1HKA3R3B	50V 3U	1	
C6007	ERJ3GEY0R00V	1/10W 0	1	
C6008	ECJ1VC1H471J	50V 470P	1	
C6009	F1H1H103A220	50V 0.01U	1	
C6010	ECJ1VC1H120J	50V 12P	1	
C6011	ECJ1VC1H120J	50V 12P	1	
C6012	F1H1C104A008	16V 0.1U	1	
C6014	F1H1H102A219	50V 1000P	1	
C6015	F1H1C333A071	16V 0.033U	1	
C6016	F1H1H102A219	50V 1000P	1	
C6018	F1H1H103A220	50V 0.01U	1	
C6019	F1J1H104A578	50V 0.1U	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C6020	F1H1H102A219	50V 1000P	1	
C6101	F1H1H103A220	50V 0.01U	1	
C6102	ECJ1VF1A105Z	10V 1U	1	
C6103	ECJ1VC1H561J	50V 560P	1	
C6104	F1H1H103A220	50V 0.01U	1	
C6302	F1H1H103A220	50V 0.01U	1	
C6303	ECEA0JKA470B	6.3V 47U	1	
C6308	ECEA0JKA470B	6.3V 47U	1	
C7301	ECEA1HKA2R2B	50V 2.2U	1	
C7302	F1H1C333A071	16V 0.033U	1	
C7303	F1H1C104A041	16V 0.1U	1	
C7304	F1H1E223A002	25V 0.022U	1	
C7305	F1H1C104A041	16V 0.1U	1	
C7306	ECEA1HKA3R3B	50V 3U	1	
C7307	ECEA1HKAR33B	50V 33U	1	
C7308	ECEA1CKA100B	16V 10U	1	
C7309	ECJ1VF1C334Z	16V 0.33U	1	
C7310	F1H1C104A041	16V 0.1U	1	
C7311	ECJ1VB1A224K	10V 0.22U	1	
C7312	F1H1H102A219	50V 1000P	1	
C7313	ECEA1HKA4R7B	50V 4.7U	1	
C7314	ECEA1HKA2R2B	50V 2.2U	1	
C7315	ECEA1HKA2R2B	50V 2.2U	1	
C7316	F1H1E223A002	25V 0.022U	1	
C7317	F1H1E223A002	25V 0.022U	1	
C7318	ECEA1HKA2R2B	50V 2.2U	1	
C7319	F2A0J470A245	6.3V 47U	1	
C7320	F1H1H103A220	50V 0.01U	1	
C7321	ECEA1CKA100B	16V 10U	1	
C7322	ECEA1CKA100B	16V 10U	1	
C7401	ECEA1HKA010B	50V 1U	1	
C7403	F1H1C104A041	16V 0.1U	1	
C7404	ECEA0JKA470B	6.3V 47U	1	
C7405	F1H0J1050010	6.3V 1U	1	
C7406	F1H1C104A008	16V 0.1U	1	
C7408	ECJ2FB1A105K	10V 1U	1	
C7421	ECEA0JKA470B	6.3V 47U	1	
C7422	F1H1H103A220	50V 0.01U	1	
C7432	F1H1H103A219	50V 0.01U	1	
C7433	F1H1H103A219	50V 0.01U	1	
C7435	ECJ1VC1H220J	50V 22P	1	
C7436	ECJ1VC1H220J	50V 22P	1	
C7507	F1H1H103A220	50V 0.01U	1	
C7508	F1H1H103A220	50V 0.01U	1	
C7509	F1H1H103A220	50V 0.01U	1	
C7510	F1H1C104A008	16V 0.1U	1	
C7511	ECJ1VC1H220J	50V 22P	1	
C7512	ECJ1VC1H220J	50V 22P	1	
C7513	ECJ1VC1H150J	50V 15P	1	
C7514	ECJ1VC1H220J	50V 22P	1	
C7515	F1H1C104A008	16V 0.1U	1	
C7538	ECA0JM471B	6.3V 470U	1	
C7540	ECJ1VF1A105Z	10V 1U	1	
D1501	B3EA00000072	LED	1	
D2001	B0AACK000004	DIODE	1	
D2002	B0AACK000004	DIODE	1	
D2502	MAZ4160NMF	DIODE	1	
D3001	MAZ4056NHF	DIODE	1	
D4501	B0AACK000004	DIODE	1	
D4502	MAZ4056NHF	DIODE	1	
D6001	B0AACK000004	DIODE	1	
D6306	MAZ4056NHF	DIODE	1	
D7401	MAZ4300NMF	DIODE	1	
D7501	B0AACK000004	DIODE	1	
D7751	B0AACK000004	DIODE	1	
DP7501	A2BD00000133	FIP DISPLAY	1	
FL7301	EFCT4R5MS5W	FILTER	1	
IC1511	B3NAA0000049	IC	1	
IC1512	B3NAA0000049	IC	1	
IC2501	C1AB00001767	IC	1	
IC3001	C1AB00002083	IC	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
IC3701	C1AB00001918	IC	1	
IC3902	C1AB00001935	IC	1	
IC4501	AN3656NFBPBV	IC	1	
IC4801	C0JBAR000438	IC	1	
IC4802	C0ABBB000228	IC	1	
IC4803	C0CBCDC00027	IC	1	
IC4804	C1AB00001920	IC	1	
IC6001	C2CBJG000591	IC	1	
IC6201	C0EBH0000172	IC	1	
IC6301	C0CBCDC00020	IC	1	
IC7301	AN5832SA-E1V	IC	1	
IC7401	C0BBBB000024	IC	1	
IC7402	C0CBCDD00006	IC	1	
IC7501	MN101C87ABC	IC	1	
IC7502	C0EBE0000457	IC	1	
⚠ IP6001	K5H5012A0010	IC PROTECTOR	1	
J1	VEE0U97	EARTH WIRE	1	
JK3902	K1U717B00005	JACK, COMPONENT OUT, SVIDEO	1	
JK3903	K1U718B00003	JACK, IN1	1	
JK4801	B3ZAZ0000016	JACK, OPTICAL	1	
K3006	ERJ3GEY0R00V	1/10W 0	1	
K3010	ERJ3GEY0R00V	1/10W 0	1	
K4506	ERJ3GEY0R00V	1/10W 0	1	
L3002	G0C271JA0019	COIL	1	
L3003	G0C270JA0019	COIL 27UH	1	
L3004	G0C680JA0019	COIL	1	
L3005	G0C270JA0019	COIL 27UH	1	
L3006	G1C120JA0036	COIL	1	
L3701	G0C220JA0019	COIL 22UH	1	
L3702	G0C220JA0019	COIL 22UH	1	
L4061	G0C221KA0065	COIL	1	
L4501	G0C1R2J00004	COIL 1.2UH	1	
L4502	G0C391JA0019	COIL	1	
L4503	G0C101JA0019	COIL 100UH	1	
L5001	G0C680JA0019	COIL	1	
L6102	G0C1R5JA0019	COIL	1	
L7401	G0A100HA0023	COIL 10UH	1	
LB3101	J0JCC0000103	COIL	1	
LB3102	J0JCC0000103	COIL	1	
LB3103	J0JCC0000103	COIL	1	
LB3104	J0JCC0000103	COIL	1	
LB3105	J0JCC0000103	COIL	1	
LB3106	J0JCC0000103	COIL	1	
LB3107	J0JCC0000103	COIL	1	
LB3108	J0JCC0000103	COIL	1	
LB3110	J0JCC0000103	COIL	1	
LB3111	J0JCC0000103	COIL	1	
LB4101	J0JCC0000103	COIL	1	
LB4102	J0JCC0000103	COIL	1	
LB4103	J0JCC0000103	COIL	1	
LB4104	J0JCC0000103	COIL	1	
LB4105	J0JCC0000103	COIL	1	
LB4107	J0JCC0000103	COIL	1	
LB7403	ERJ3GEY0R00V	1/10W 0	1	
LB7405	ERJ3GEY0R00V	1/10W 0	1	
LB7407	ERJ3GEY0R00V	1/10W 0	1	
LB7408	J0JBC0000015	COIL	1	
LB7409	J0JBC0000015	COIL	1	
LB7410	J0JBC0000015	COIL	1	
LB7411	J0JBC0000015	COIL	1	
LB7412	J0JBC0000015	COIL	1	
LB7505	ERJ3GEY0R00V	1/10W 0	1	
P1531	K1KA02A00375	CONNECTOR(2P)	1	
P2501	K1MN07A00020	CONNECTOR(7P)	1	
P2571	K1KA08A00290	CONNECTOR(8P)	1	
P3001	K1MN09A00029	CONNECTOR(9P)	1	
P4001	K1MZ02A00003	CONNECTOR(2P)	1	
P4002	K1MN06A00033	CONNECTOR(6P)	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
P6001	K1KB15AA0032	CONNECTOR(15P)	1	
P6002	K1KB19AA0032	CONNECTOR(19P)	1	
P6003	K1KB19AA0032	CONNECTOR(19P)	1	
P7502	K1KB08B00043	CONNECTOR(8P)	1	
PS6002	K1KB12B00040	CONNECTOR(FEMALE) 12P	1	
Q1501	PNB2302MF	TRANSISTOR	1	
Q1502	PNB2302MF	TRANSISTOR	1	
Q3001	2SD1819A0L	TRANSISTOR	1	
Q3002	B1AAGD000016	TRANSISTOR	1	
Q3003	B1AAGD000016	TRANSISTOR	1	
Q3004	2SD1819A0L	TRANSISTOR	1	
Q3901	2SD1819A0L	TRANSISTOR	1	
Q3902	2SB1218A0L	TRANSISTOR	1	
Q4001	2SD114900L	TRANSISTOR	1	
Q4002	2SD1819A0L	TRANSISTOR	1	
Q4081	2SD1992A0A	TRANSISTOR	1	
Q4084	2SB0710A0L	TRANSISTOR	1	
Q4501	2SB0710A0L	TRANSISTOR	1	
Q4502	B1AAGD000016	TRANSISTOR	1	
Q4801	2SD1819A0L	TRANSISTOR	1	
Q4802	2SD1819A0L	TRANSISTOR	1	
Q6305	2SD0601A0L	TRANSISTOR	1	
Q7401	2SB1218A0L	TRANSISTOR	1	
Q7402	2SD1819A0L	TRANSISTOR	1	
QR4001	UNR511100L	TRANSISTOR	1	
QR4082	UNR521300L	TRANSISTOR	1	
QR4501	UNR521100L	TRANSISTOR	1	
QR4802	UNR521600L	TRANSISTOR	1	
QR4804	UNR511100L	TRANSISTOR	1	
QR4805	UNR521600L	TRANSISTOR	1	
QR4806	UNR521600L	TRANSISTOR	1	
QR4807	UNR511300L	TRANSISTOR	1	
QR4810	UNR521300L	TRANSISTOR	1	
QR4811	UNR521500L	TRANSISTOR	1	
QR4812	UNR521500L	TRANSISTOR	1	
QR4813	UNR511300L	TRANSISTOR	1	
QR4816	UNR521600L	TRANSISTOR	1	
QR7401	UNR511200L	TRANSISTOR	1	
R1501	D0GB273JA007	1/10W 27K	1	
R1502	D0GB273JA007	1/10W 27K	1	
R1503	ERDS2TJ151T	1/4W 150	1	
R1511	D0GB273JA007	1/10W 27K	1	
R1512	D0GB273JA007	1/10W 27K	1	
R1513	ERJ6GEYJ121V	1/8W 120	1	
R2001	D0GB392JA007	1/10W 3.9K	1	
R2002	D0GB105JA007	1/10W 1M	1	
R2099	ERJ3GEYJ682V	1/10W 6.8K	1	
R2501	ERJ6GEYJ1R2V	1/8W 1.2	1	
R2502	ERJ6GEYJ1R5V	1/8W 1.5	1	
R2503	ERDS2TJ182T	1/4W 1.8K	1	
R2514	D0GB221JA041	1/10W 220	1	
R2515	D0GB221JA041	1/10W 220	1	
R2516	D0GB221JA041	1/10W 220	1	
R2520	D0GB183JA007	1/10W 18K	1	
R2521	ERJ3GEYJ102V	1/10W 1K	1	
R2551	ERJ3GEYJ103V	1/10W 10K	1	
R2552	ERJ3GEYJ103V	1/10W 10K	1	
R2561	ERJ3GEYJ102V	1/10W 1K	1	
R2562	D0GB473JA041	1/10W 47K	1	
R2563	ERJ3GEYJ102V	1/10W 1K	1	
R2564	D0GB101JA007	1/10W 100	1	
R2565	D0GB101JA007	1/10W 100	1	
R3001	D0GB152JA007	1/10W 1.5K	1	
R3002	ERJ3GEYJ622V	1/10W 6.2K	1	
R3003	ERDS2TJ471T	1/4W 470	1	
R3009	D0GB153JA007	1/10W 15K	1	
R3013	ERJ3GEYJ103V	1/10W 10K	1	
R3014	ERJ3GEYJ102V	1/10W 1K	1	
R3017	ERJ3GEYJ102V	1/10W 1K	1	
R3021	D0GB222JA041	1/10W 2.2K	1	
R3022	D0GB332JA007	1/10W 3.3K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R3023	D0GB152JA007	1/10W 1.5K	1	
R3030	ERJ3GEYJ685V	1/10W 6.8M	1	
R3031	D0GB331JA007	1/10W 330	1	
R3032	D0GB392JA007	1/10W 3.9K	1	
R3035	D0GB222JA041	1/10W 2.2K	1	
R3701	ERJ3RBD104V	1/16W 100K	1	
R3702	ERJ3RBD153V	1/16W 15K	1	
R3703	D0GB221JA041	1/10W 220	1	
R3704	D0GB221JA041	1/10W 220	1	
R3707	D0GB105JA007	1/10W 1M	1	
R3708	ERJ3GEYJ750V	1/10W 75	1	
R3710	ERJ3GEYJ103V	1/10W 10K	1	
R3711	ERJ3GEYJ103V	1/10W 10K	1	
R3907	ERJ3GEYF750V	1/10W 75	1	
R3908	ERJ3GEYF750V	1/10W 75	1	
R3909	ERJ3GEYF750V	1/10W 75	1	
R3912	ERJ3GEYF750V	1/10W 75	1	
R3913	D0GB680JA007	1/10W 68	1	
R3914	ERJ3GEYF750V	1/10W 75	1	
R3915	ERJ3GEYF750V	1/10W 75	1	
R3922	ERJ3GEYJ912V	1/10W 9.1K	1	
R3924	ERJ3GEYJ750V	1/10W 75	1	
R3926	ERJ3GEYJ102V	1/10W 1K	1	
R3928	ERJ3GEYJ750V	1/10W 75	1	
R3929	ERJ3GEYJ750V	1/10W 75	1	
R3932	D0GB561JA007	1/10W 560	1	
R3933	D0GB561JA007	1/10W 560	1	
R3936	ERJ3GEYJ102V	1/10W 1K	1	
R3937	D0GB471JA041	1/10W 470	1	
R3938	D0GB471JA041	1/10W 470	1	
R3939	D0GB471JA041	1/10W 470	1	
R3940	D0GB471JA041	1/10W 470	1	
R4001	ERJ3GEYJ102V	1/10W 1K	1	
R4003	D0GB153JA007	1/10W 15K	1	
R4004	D0GB271JA007	1/10W 270	1	
R4005	ERJ3GEYJ102V	1/10W 1K	1	
R4006	D0GB153JA007	1/10W 15K	1	
R4007	ERJ3GEYJ103V	1/10W 10K	1	
R4008	D0GB334JA007	1/10W 330K	1	
R4009	ERJ3GEY0R00V	1/10W 0	1	
R4011	D0GB153JA007	1/10W 15K	1	
R4012	D0GB223JA041	1/10W 22K	1	
R4081	ERJ3GEYJ103V	1/10W 10K	1	
R4082	D0GB332JA007	1/10W 3.3K	1	
R4086	D0GB222JA041	1/10W 2.2K	1	
R4087	D0GB222JA041	1/10W 2.2K	1	
R4500	ERJ3GEYJ102V	1/10W 1K	1	
R4501	D0GB563JA007	1/10W 56K	1	
R4502	D0GB473JA041	1/10W 47K	1	
R4503	D0GB473JA041	1/10W 47K	1	
R4504	ERDS2TJ821T	1/4W 820	1	
R4505	ERJ3GEYJ622V	1/10W 6.2K	1	
R4506	ERJ3GEYJ622V	1/10W 6.2K	1	
R4507	D0GB472JA041	1/10W 4.7K	1	
R4508	D0GB472JA041	1/10W 4.7K	1	
R4509	D0GB473JA041	1/10W 47K	1	
R4510	ERJ3GEYJ622V	1/10W 6.2K	1	
R4511	D0GB473JA041	1/10W 47K	1	
R4512	ERJ3GEYJ622V	1/10W 6.2K	1	
R4513	D0GB472JA041	1/10W 4.7K	1	
R4515	D0GB563JA007	1/10W 56K	1	
R4518	ERJ3GEYJ753V	1/10W 75K	1	
R4519	ERJ3GEYJ753V	1/10W 75K	1	
R4520	D0GB472JA041	1/10W 4.7K	1	
R4521	ERJ3GEYJ511V	1/10W 510	1	
R4522	ERJ3GEYJ511V	1/10W 510	1	
R4525	ERJ3GEYJ102V	1/10W 1K	1	
R4526	D0GB243JA007	1/10W 24K	1	
R4527	ERJ3GEYJ682V	1/10W 6.8K	1	
R4529	ERJ3GEYJ681V	1/10W 680	1	
R4534	D0GB124JA007	1/10W 120K	1	
R4538	D0GB393JA007	1/10W 39K	1	
R4539	ERJ3GEYJ102V	1/10W 1K	1	
R4540	ERJ3GEYJ102V	1/10W 1K	1	
R4553	ERJ3GEYJ103V	1/10W 10K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R4557	ERJ3GEYJ103V	1/10W 10K	1	
R4801	ERJ3GEYJ681V	1/10W 680	1	
R4802	ERJ3GEYJ681V	1/10W 680	1	
R4803	ERJ3GEYJ681V	1/10W 680	1	
R4804	ERJ3GEYJ681V	1/10W 680	1	
R4805	D0GB222JA041	1/10W 2.2K	1	
R4806	D0GB471JA041	1/10W 470	1	
R4807	D0GB471JA041	1/10W 470	1	
R4808	D0GB104JA007	1/10W 100K	1	
R4809	D0GB104JA007	1/10W 100K	1	
R4810	ERJ3GEYJ102V	1/10W 1K	1	
R4811	ERJ3GEYJ102V	1/10W 1K	1	
R4812	ERJ3GEYJ102V	1/10W 1K	1	
R4813	ERJ3GEYJ102V	1/10W 1K	1	
R4814	D0GB473JA041	1/10W 47K	1	
R4815	ERJ3GEYJ102V	1/10W 1K	1	
R4816	ERJ3GEYJ102V	1/10W 1K	1	
R4817	D0GB101JA007	1/10W 100	1	
R4818	D0GB101JA007	1/10W 100	1	
R4819	D0GB335JA040	1/10W 3.3M	1	
R4820	ERJ3GEYJ103V	1/10W 10K	1	
R4821	ERJ3GEYJ103V	1/10W 10K	1	
R4822	D0GB821JA007	1/10W 820	1	
R4823	D0GB821JA007	1/10W 820	1	
R4824	ERJ3GEYJ102V	1/10W 1K	1	
R4825	ERJ3GEYJ102V	1/10W 1K	1	
R4826	D0HB123ZA002	1/16W 12K	1	
R4827	D0HB123ZA002	1/16W 12K	1	
R4829	D0HB123ZA002	1/16W 12K	1	
R4830	D0HB123ZA002	1/16W 12K	1	
R4832	D0GB473JA041	1/10W 47K	1	
R4833	D0GB473JA041	1/10W 47K	1	
R4834	ERJ3GEYJ102V	1/10W 1K	1	
R4835	ERJ3GEYJ102V	1/10W 1K	1	
R4836	ERJ3GEY0R00V	1/10W 0	1	
R4837	ERJ3GEY0R00V	1/10W 0	1	
R4840	ERJ3GEY0R00V	1/10W 0	1	
R4855	D0GB104JA007	1/10W 100K	1	
R4856	D0GB104JA007	1/10W 100K	1	
R4858	D0GB221JA041	1/10W 220	1	
R4859	D0GB471JA041	1/10W 470	1	
R4860	D0GB221JA041	1/10W 220	1	
R4861	D0GB471JA041	1/10W 470	1	
R4862	D0GB104JA007	1/10W 100K	1	
R4863	D0GB104JA007	1/10W 100K	1	
R6001	ERJ3GEYJ102V	1/10W 1K	1	
R6002	ERJ3GEYJ102V	1/10W 1K	1	
R6004	ERJ3GEYJ103V	1/10W 10K	1	
R6006	D0GB183JA007	1/10W 18K	1	
R6007	D0GB183JA007	1/10W 18K	1	
R6008	D0GB222JA041	1/10W 2.2K	1	
R6009	ERJ3GEYJ103V	1/10W 10K	1	
R6010	ERJ3GEYJ103V	1/10W 10K	1	
R6011	D0GB183JA007	1/10W 18K	1	
R6012	D0GB221JA041	1/10W 220	1	
R6013	D0GB221JA041	1/10W 220	1	
R6015	D0GB101JA007	1/10W 100	1	
R6017	D0GB222JA041	1/10W 2.2K	1	
R6018	D0GB101JA007	1/10W 100	1	
R6019	ERJ3GEYJ103V	1/10W 10K	1	
R6020	D0GB221JA041	1/10W 220	1	
R6022	D0GB221JA041	1/10W 220	1	
R6023	D0GB221JA041	1/10W 220	1	
R6024	D0GB221JA041	1/10W 220	1	
R6026	ERJ3GEYJ103V	1/10W 10K	1	
R6027	ERJ3GEYJ103V	1/10W 10K	1	
R6028	ERJ3GEYJ103V	1/10W 10K	1	
R6029	D0GB221JA041	1/10W 220	1	
R6101	D0GB105JA007	1/10W 1M	1	
R6102	D0GB471JA041	1/10W 470	1	
R6103	D0GB181JA007	1/10W 180	1	
R6201	D0GB332JA007	1/10W 3.3K	1	
R6309	D0GB272JA007	1/10W 2.7K	1	
R6803	D0GB474JA041	1/10W 470K	1	
R7301	ERJ3GEYJ103V	1/10W 10K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R7303	D0GB332JA007	1/10W 3.3K	1	
R7305	ERJ6GEYJ331V	1/8W 330	1	
R7306	ERJ6GEYJ331V	1/8W 330	1	
R7307	D0GB184JA007	1/10W 180K	1	
R7308	D0GB331JA007	1/10W 330	1	
R7309	D0GB331JA007	1/10W 330	1	
R7310	ERJ3GEY0R00V	1/10W 0	1	
R7311	ERJ3GEYJ102V	1/10W 1K	1	
R7401	ERDS2TJ102T	1/4W 1K	1	
R7403	D0GB222JA041	1/10W 2.2K	1	
R7405	ERJ3GEYJ102V	1/10W 1K	1	
R7406	D0GB153JA007	1/10W 15K	1	
R7407	ERJ3GEYJ133V	1/10W 13K	1	
R7408	D0GB222JA041	1/10W 2.2K	1	
R7410	ERJ6GEY0R00V	1/8W 0	1	
R7411	ERJ6GEY0R00V	1/8W 0	1	
R7415	ERJ3GEYJ681V	1/10W 680	1	
R7416	D0GB104JA007	1/10W 100K	1	
R7501	D0GB473JA041	1/10W 47K	1	
R7502	D0GB473JA041	1/10W 47K	1	
R7504	D0GB101JA007	1/10W 100	1	
R7505	D0GB101JA007	1/10W 100	1	
R7506	D0GB101JA007	1/10W 100	1	
R7507	ERDS2TJ8R2T	1/4W 8.2	1	
R7510	D0GB101JA007	1/10W 100	1	
R7511	ERJ3GEYJ822V	1/10W 8.2K	1	
R7512	ERJ3GEYJ822V	1/10W 8.2K	1	
R7513	ERJ3GEYJ822V	1/10W 8.2K	1	
R7514	D0GB101JA007	1/10W 100	1	
R7515	D0GB101JA007	1/10W 100	1	
R7516	D0GB101JA007	1/10W 100	1	
R7517	ERJ3GEY0R00V	1/10W 0	1	
R7519	ERJ3GEYJ103V	1/10W 10K	1	
R7520	D0GB223JA041	1/10W 22K	1	
R7526	D0GB101JA007	1/10W 100	1	
R7527	D0GB104JA007	1/10W 100K	1	
R7528	D0GB101JA007	1/10W 100	1	
R7529	D0GB101JA007	1/10W 100	1	
R7530	ERJ3GEY0R00V	1/10W 0	1	
R7556	ERJ3GEYJ103V	1/10W 10K	1	
R7561	D0GB473JA041	1/10W 47K	1	
S1531	K0C111A00006	SWITCH,SAFETY TAB	1	
S1532	K0ZZ00000598	SWITCH,MODE	1	
⚠ T4081	G2A472C00003	VARIABLE COILS	1	
TU7401	ENG56D08G1F	TUNER	1	
W701	ERJ3GEY0R00V	1/10W 0	1	
W702	ERJ3GEY0R00V	1/10W 0	1	
W703	ERJ3GEY0R00V	1/10W 0	1	
W704	ERJ3GEY0R00V	1/10W 0	1	
W705	ERJ3GEY0R00V	1/10W 0	1	
W706	ERJ3GEY0R00V	1/10W 0	1	
W707	ERJ3GEY0R00V	1/10W 0	1	
W708	ERJ3GEY0R00V	1/10W 0	1	
W709	ERJ6GEY0R00V	1/8W 0	1	
W710	ERJ3GEY0R00V	1/10W 0	1	
W711	ERJ6GEY0R00V	1/8W 0	1	
W712	ERJ6GEY0R00V	1/8W 0	1	
W713	ERJ6GEY0R00V	1/8W 0	1	
W714	ERJ6GEY0R00V	1/8W 0	1	
W715	ERJ6GEY0R00V	1/8W 0	1	
W716	ERJ6GEY0R00V	1/8W 0	1	
W717	ERJ3GEY0R00V	1/10W 0	1	
W718	ERJ3GEY0R00V	1/10W 0	1	
W719	ERJ3GEY0R00V	1/10W 0	1	
W720	ERJ6GEY0R00V	1/8W 0	1	
W721	ERJ6GEY0R00V	1/8W 0	1	
W722	ERJ3GEY0R00V	1/10W 0	1	
W723	ERJ6GEY0R00V	1/8W 0	1	
W724	ERJ3GEY0R00V	1/10W 0	1	
W725	ERJ6GEY0R00V	1/8W 0	1	
W726	ERJ3GEY0R00V	1/10W 0	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
W727	ERJ3GEY0R00V	1/10W 0	1	
W728	ERJ6GEY0R00V	1/8W 0	1	
W729	ERJ3GEY0R00V	1/10W 0	1	
W730	ERJ3GEY0R00V	1/10W 0	1	
W731	ERJ6GEY0R00V	1/8W 0	1	
W732	ERJ3GEY0R00V	1/10W 0	1	
W733	ERJ3GEY0R00V	1/10W 0	1	
W734	ERJ6GEY0R00V	1/8W 0	1	
W735	ERJ3GEY0R00V	1/10W 0	1	
W736	ERJ3GEY0R00V	1/10W 0	1	
W737	ERJ3GEY0R00V	1/10W 0	1	
W738	ERJ6GEY0R00V	1/8W 0	1	
W739	ERJ3GEY0R00V	1/10W 0	1	
W740	ERJ3GEY0R00V	1/10W 0	1	
W741	ERJ3GEY0R00V	1/10W 0	1	
W742	ERJ3GEY0R00V	1/10W 0	1	
W744	ERJ3GEY0R00V	1/10W 0	1	
W746	ERJ3GEY0R00V	1/10W 0	1	
W747	ERJ3GEY0R00V	1/10W 0	1	
W748	ERJ6GEY0R00V	1/8W 0	1	
W749	ERJ6GEY0R00V	1/8W 0	1	
W750	ERJ3GEY0R00V	1/10W 0	1	
W751	ERJ3GEY0R00V	1/10W 0	1	
W752	ERJ3GEY0R00V	1/10W 0	1	
W753	ERJ3GEY0R00V	1/10W 0	1	
W754	ERJ3GEY0R00V	1/10W 0	1	
W755	ERJ3GEY0R00V	1/10W 0	1	
W756	ERJ3GEY0R00V	1/10W 0	1	
W757	ERJ6GEY0R00V	1/8W 0	1	
W758	ERJ3GEY0R00V	1/10W 0	1	
W759	ERJ3GEY0R00V	1/10W 0	1	
W760	ERJ3GEY0R00V	1/10W 0	1	
W761	ERJ3GEY0R00V	1/10W 0	1	
X3002	H0D357400067	OSCILLATOR	1	
X6001	H0D120500009	OSCILLATOR	1	
X7501	H0D800400020	CRYSTAL OSCILLATOR	1	
X7502	H0A327200098	CRYSTAL OSCILLATOR	1	
ZB7501	RMN0829	FL HOLDER	1	
■	03	VEP09138A	1	(DIGITAL I/F P.C.B.)
C11101	ECQU2A223MLC	0.022U	1	
C11102	ECQU2A683MLC	100V 0.068U	1	
C11103	ECKWNA101MBV	250V 100P	1	
C11104	ECKWNA101MBV	250V 100P	1	
C11105	ECKWNA471MBV	250V 470P	1	
C11106	ECKWNA471MBV	250V 470P	1	
C11107	ECKWNA102MEV	250V 1000P	1	
C11108	F2B2E2210011	250V 220U	1	
C11201	EEUFM1V680B	35V 68U	1	
C11202	F1J1H102A623	50V 1000P	1	
C11203	ECJ2VC1H221J	50V 220P	1	
C11204	ECJ2VB1H332K	50V 3300P	1	
⚠ C11205	F1B3A3920001	3900P	1	
C11206	EEUFM1V680B	35V 68U	1	
C11207	F1J1H102A623	50V 1000P	1	
C11208	ECJ2VC1H331J	50V 330P	1	
C11209	ECJ2VB1H392K	50V 3900P	1	
⚠ C11210	F1B3A2720001	2700P	1	
C11211	ECJ2VC1H331J	50V 330P	1	
C11302	ECJ2VB1E104K	25V 0.1U	1	
C11303	ECJ2VB1E473K	25V 0.047U	1	
C11305	ECJ2VB1E104K	25V 0.1U	1	
C11306	ECJ2VB1E473K	25V 0.047U	1	
C11401	F2A1E2210050	25V 220U	1	
C11402	F2A1E2210050	25V 220U	1	
C11403	F2A1C102A625	16V 1000U	1	
C11404	F2A1C561A629	16V 560U	1	
C11405	F2A0J222A556	6.3V 2200P	1	
C11406	F2A0J102A551	6.3V 1000U	1	
C11407	EEUFM1C121B	16V 120U	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C11408	F1J1H104A578	50V 0.1U	1	
C11409	EEUFM1C121B	16V 120U	1	
C11410	F1J1H104A578	50V 0.1U	1	
C11412	F1J1H104A578	50V 0.1U	1	
C11501	F2A1C561A629	16V 560U	1	
C11502	EEUFM1C121B	16V 120U	1	
C11503	EEUFM1E221B	25V 220U	1	
C11504	F1H1C104A008	16V 0.1U	1	
C11505	F1H1C104A008	16V 0.1U	1	
C11506	F1H1C104A041	16V 0.1U	1	
C11507	ECJ1VC1H680J	50V 68P	1	
C11508	ECJ1VB1H472K	50V 4700P	1	
C11509	F2A1A4710038	10V 470U	1	
C11601	F2A0J222A556	6.3V 2200P	1	
C11602	F2A0J102A551	6.3V 1000U	1	
C11701	F2A0J102A551	6.3V 1000U	1	
C11702	F2A0J681A550	6.3V 680U	1	
C11801	F2A1H5600009	50V 56U	1	
C11901	F2A1A1010072	10V 100U	1	
C11902	F2A1A1010072	10V 100U	1	
C31001	ECJ1VB1H103K	50V 0.01U	1	
C31002	F1H1A105A028	10V 1U	1	
C31003	F1J0J106A014	6.3V 10U	1	
C31004	ECJ1VB1H103K	50V 0.01U	1	
C31005	F1H0J1050010	6.3V 1U	1	
C31006	F1H1A105A028	10V 1U	1	
C31007	F1H0J1050010	6.3V 1U	1	
C31008	F1J0J106A014	6.3V 10U	1	
C31009	F1H1A105A028	10V 1U	1	
C31010	F1H0J1050010	6.3V 1U	1	
C33735	ECEA0JKN470B	6.3V 47U	1	
C33738	F1H1H103A219	50V 0.01U	1	
C33740	ECEA0JKN470B	6.3V 47U	1	
C37001	F1H1C104A041	16V 0.1U	1	
C37002	ECEA1CKA220B	16V 22U	1	
C37003	ECEA0JKS470B	6.3V 47U	1	
C37100	F1H1C104A041	16V 0.1U	1	
C37102	F1H1C104A041	16V 0.1U	1	
C37103	F1H1C104A041	16V 0.1U	1	
C37105	ECJ1VC1H101J	50V 100P	1	
C37106	F1H1C104A041	16V 0.1U	1	
C37107	F1H1C104A041	16V 0.1U	1	
C37108	F1H0J106A009	603V 10U	1	
C37109	F1H1C104A041	16V 0.1U	1	
C37110	F1H1C104A041	16V 0.1U	1	
C37114	F1J0J106A014	6.3V 10U	1	
C37117	ECJ1VC1H101J	50V 100P	1	
C37118	ECJ1VC1H101J	50V 100P	1	
C45001	F1H1C104A008	16V 0.1U	1	
C45003	ECQV1H104JL3	50V 0.1U	1	
C45004	F2A0J471A247	6.3V 470U	1	
C45005	F2A0J101A592	6.3V 10U	1	
C45006	F1H1C104A008	16V 0.1U	1	
C45007	F1H1C104A008	16V 0.1U	1	
C45008	F2A1C101A699	16V 100U	1	
C45009	ECA1CAK100XB	16V 10U	1	
C45010	F2A1C470A698	16V 47U	1	
C45011	ECA1CAK100XB	16V 10U	1	
C45012	F2A1C470A698	16V 47U	1	
C45013	ECQB1H473JF3	50V 0.047U	1	
C45014	F2A1E4R7A641	25V 4.7U	1	
C45019	F1H1H102A219	50V 1000P	1	
C45020	F1H1H102A219	50V 1000P	1	
D11101	B0EDKT000009	DIODE	1	
D11102	B0AAGR000003	DIODE	1	
D11201	B0AADM000003	DIODE	1	
D11202	MAZ80910ML	DIODE	1	
D11203	MA2J11100L	DIODE	1	
D11204	MAZ73000BC	DIODE	1	
D11205	B0AADM000003	DIODE	1	
D11206	MAZ80820LL	DIODE	1	
D11207	B0AACK000004	DIODE	1	
D11208	MAZ73000BC	DIODE	1	
D11301	MA2J11100L	DIODE	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
D11302	MA2J11100L	DIODE	1	
D11401	B0JAMG000010	DIODE	1	
D11402	B0JAMG000010	DIODE	1	
D11403	B0JCNG000003	DIODE	1	
D11404	B0JCNG000003	DIODE	1	
D11405	B0JAME000025	DIODE	1	
D11406	B0JAME000025	DIODE	1	
D11501	B0JAMG000010	DIODE	1	
D11502	B0JAMG000010	DIODE	1	
D11503	B0JCPD000021	DIODE	1	
D11601	B0JAQE000004	DIODE	1	
D11701	B0JCPD000021	DIODE	1	
D11702	B0JCPD000021	DIODE	1	
D11703	B0JCPD000021	DIODE	1	
D11704	B0JCPD000021	DIODE	1	
D11801	MA2C18500E	DIODE	1	
D11901	B0JAME000025	DIODE	1	
D11902	MA2C18500E	DIODE	1	
D31001	B0AAED000003	DIODE	1	
D31002	B0AAED000003	DIODE	1	
⚠ F11101	K5D202BK0005	FUSE	1	
IC11201	C0DACZH00030	IC	1	
IC11202	C0DACZH00030	IC	1	
IC11301	C0DAEMB00003	IC	1	
IC11302	C0DAEMB00003	IC	1	
IC11401	C0DAZJH00003	IC	1	
IC11501	C0DBAKG00007	IC	1	
IC31002	C0CBCDC00052	IC	1	
IC31003	C0CBCBD00048	IC	1	
IC31004	C0CBCBD00048	IC	1	
IC37001	C0ABBA000146	IC	1	
IC45001	C0DBAHD00013	IC	1	
IC45002	C0ABBB000119	IC	1	
IC45003	C0ABBA000054	IC	1	
⚠ IP11901	K5H1022A0011	IC PROTECTOR	1	
⚠ IP11902	K5H1022A0011	IC PROTECTOR	1	
IP11903	ERJ3GEY0R00V	1/10W 0	1	
K11401	ERJ3GEY0R00V	1/10W 0	1	
K31001	ERJ3GEY0R00V	1/10W 0	1	
K31002	ERJ3GEY0R00V	1/10W 0	1	
L11101	G0B832F00003	LINE FILTER	1	
L11102	G0B832F00003	LINE FILTER	1	
L11401	G0A100HA0023	COIL 10UH	1	
L11402	G0A100HA0023	COIL 10UH	1	
L11403	G0A100HA0023	COIL 10UH	1	
L11404	G0A100HA0023	COIL 10UH	1	
L11405	G0A220GA0026	COIL 22UH	1	
L11501	G0A100HA0023	COIL 10UH	1	
L11502	G0A100HA0023	COIL 10UH	1	
L11503	G0A150ZA0030	COIL	1	
L11601	G0A100HA0023	COIL 10UH	1	
L11701	G0A100HA0023	COIL 10UH	1	
L37102	G0C680JA0019	COIL	1	
LB11101	J0JKB0000003	COIL	1	
LB11102	J0JKB0000003	COIL	1	
LB11103	J0JHC0000048	FILTER	1	
LB11201	J0JHC0000048	FILTER	1	
LB11202	J0JHC0000048	FILTER	1	
LB11501	J0JHC0000048	FILTER	1	
LB11801	J0JHC0000048	FILTER	1	
LB11901	J0JHC0000048	FILTER	1	
LB11902	J0JHC0000048	FILTER	1	
LB34002	J0JCC0000103	COIL	1	
LB37100	J0JHC0000032	COIL	1	
LB37101	J0JHC0000032	COIL	1	
LB37102	J0JHC0000032	COIL	1	
LB37103	J0JKB0000003	COIL	1	
LB37104	J0JKB0000003	COIL	1	
LB37105	J0JHC0000032	COIL	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
LB37106	J0JHC0000032	COIL	1	
LB37107	J0JHC0000032	COIL	1	
⚠ P11101	K2AB2B000008	AC INLET	1	
P11401	K1KA04AA0301	CONNECTOR(4P)	1	
P31901	K1KA15A00118	CONNECTOR(15P)	1	
P31902	K1KA19A00007	CONNECTOR(19P)	1	
P31903	K1KA19A00007	CONNECTOR(19P)	1	
P37001	K1KA03AA0301	CONNECTOR(3P)	1	
P37101	K1KA88A00003	CONNECTOR(88P)	1	
Q11301	B3PBA0000237	TRANSISTOR	1	
Q11302	B3PBA0000237	TRANSISTOR	1	
Q11403	2SD0601AHL	CHIP TRANSISTOR	1	
Q11501	B1DHDD000022	TRANSISTOR	1	
Q37001	2SD0874A0L	TRANSISTOR	1	
Q37002	2SD1819A0L	TRANSISTOR	1	
Q37003	2SB1218A0L	TRANSISTOR	1	
QR11402	UNR221100L	TRANSISTOR	1	
QR11501	UNR221300L	TRANSISTOR	1	
QR11502	UNR221300L	TRANSISTOR	1	
QR45006	UNR521100L	TRANSISTOR	1	
QR45007	UNR521100L	TRANSISTOR	1	
QR45008	UNR521100L	TRANSISTOR	1	
QR45009	UNR521100L	TRANSISTOR	1	
R11201	ERJ6GEYJ101V	1/8W 100	1	
R11202	ERJ6GEYJ101V	1/8W 100	1	
R11203	ERJ6GEYJ153V	1/8W 15K	1	
R11204	ERJ6GEYJ684V	1/8W 680K	1	
R11205	ERJ6GEYG682V	1/8W 6.8K	1	
R11206	ERJ6GEYG471V	1/8W 470	1	
R11207	ERJ6GEYG363V	1/8W 36K	1	
R11208	ERJ6GEYG122V	1/8W 1.2K	1	
R11209	ERJ6GEYJ100V	1/8W 10	1	
R11210	ERJ6GEYJ100V	1/8W 10	1	
R11211	ERJ6GEYJ123V	1/8W 12K	1	
R11212	ERJ6GEYJ103V	1/8W 10K	1	
R11213	ERJ6GEYG562V	1/8W 5.6K	1	
R11214	ERJ6GEYG201V	1/8W 200	1	
R11215	ERJ6GEYG203V	1/8W 20K	1	
R11216	ERJ6GEYG102V	1/8W 1K	1	
R11301	ERJ6GEYJ391V	1/8W 390	1	
R11302	ERJ6GEYJ102V	1/8W 1K	1	
R11303	ERJ6GEYJ682V	1/8W 6.8K	1	
R11304	ERJ6GEYJ332V	1/8W 3.3K	1	
R11306	ERJ6GEYG242V	1/8W 2.4K	1	
R11307	ERJ6GEYG242V	1/8W 2.4K	1	
R11308	ERJ6GEYG470V	1/8W 47	1	
R11309	ERJ6GEYG151V	1/8W 150	1	
R11312	ERJ6GEYJ391V	1/8W 390	1	
R11313	ERJ6GEYJ102V	1/8W 1K	1	
R11314	ERJ6GEYJ332V	1/8W 3.3K	1	
R11315	ERJ6GEYJ223V	1/8W 22K	1	
R11317	ERJ6GEYG242V	1/8W 2.4K	1	
R11318	ERJ6GEYG242V	1/8W 2.4K	1	
R11319	ERJ6GEYG821V	1/8W 820	1	
R11320	ERJ6GEYG101V	1/8W 100	1	
R11403	D0GB472JA041	1/10W 4.7K	1	
R11404	ERJ3GEYJ103V	1/10W 10K	1	
R11501	D1BFR0270001	1/2W 0.027	1	
R11502	ERJ3RBD182V	1/16W 1.8K	1	
R11503	ERJ3RBD912V	1/16W 9.1K	1	
R11504	ERJ3RBD752V	1/16W 7.5K	1	
R11505	ERJ3GEYJ513V	1/10W 51K	1	
R11506	ERJ3GEYJ223V	1/10W 4.7K	1	
R11901	ERJ6GEY0R00V	1/8W 0	1	
R31001	D0GB223JA041	1/10W 22K	1	
R31002	D0GB221JA041	1/10W 220	1	
R31005	ERJ3GEYJ822V	1/10W 3.3K	1	
R31006	D0GB332JA007	1/10W 3.3K	1	
R31007	D0GB101JA007	1/10W 100	1	
R34011	D0GB221JA041	1/10W 220	1	
R37001	D0GB821JA007	1/10W 820	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R37003	D0GB183JA007	1/10W 18K	1	
R37004	ERJ3GEYJ103V	1/10W 10K	1	
R37005	D0GB220JA007	1/10W 22	1	
R37006	D0GB471JA041	1/10W 470	1	
R37007	D0GB471JA041	1/10W 470	1	
R37009	D0GB220JA007	1/10W 22	1	
R37010	D0GB471JA041	1/10W 470	1	
R37011	D0GB471JA041	1/10W 470	1	
R37101	D0GB472JA041	1/10W 4.7K	1	
R37102	D0GB472JA041	1/10W 4.7K	1	
R37103	ERJ3GEY0R00V	1/10W 0	1	
R45001	D0GB101JA007	1/10W 100	1	
R45002	D0HB202ZA002	1/16W 2K	1	
R45003	D0HB222ZA002	1/16W 2.2K	1	
R45004	D0HB183ZA002	1/16W 18K	1	
R45005	D0HB103ZA002	1/10W 10K	1	
R45006	D0GB473JA041	1/10W 47K	1	
R45007	D0HB183ZA002	1/16W 18K	1	
R45008	D0HB103ZA002	1/10W 10K	1	
R45009	D0GB473JA041	1/10W 47K	1	
R45010	D0HB392ZA002	1/16W 3.9K	1	
R45011	D0HB392ZA002	1/16W 3.9K	1	
R45012	D0HB622ZA002	1/16W 6.2K	1	
R45013	D0HB622ZA002	1/16W 6.2K	1	
R45014	ERJ3GEYJ103V	1/10W 10K	1	
R45015	ERJ3GEYJ103V	1/10W 10K	1	
R45018	ERJ3GEYJ102V	1/10W 1K	1	
R45019	ERJ3GEYJ102V	1/10W 1K	1	
⚠ T11201	G4D2A0000254	TRANSFORMER	1	
⚠ T11202	G4D2A0000253	TRANSFORMER	1	
⚠ VA11101	ERZVA5V471	SURGE ABSORBER	1	
W500	ERJ6GEY0R00V	1/8W 0	1	
W501	ERJ6GEY0R00V	1/8W 0	1	
W502	ERJ6GEY0R00V	1/8W 0	1	
W503	ERJ6GEY0R00V	1/8W 0	1	
W504	ERJ6GEY0R00V	1/8W 0	1	
W505	ERJ6GEY0R00V	1/8W 0	1	
W506	ERJ6GEY0R00V	1/8W 0	1	
ZA11101	EYF52BCY	FUSE HOLDER	1	
ZA11102	EYF52BCY	FUSE HOLDER	1	
■	04	VEP001K8A	1	(DV JACK P.C.B.)
P66801	K1KA05BA0061	CONNECTOR(5P)	1	
P66802	K2HZ104B0015	CONNECTOR(104P)	1	
■	06	VEP04888A	1	(FRONT JACK P.C.B.)
C3802	F1H1C104A008	16V 0.1U	1	
C4303	F1H1H101A230	50V 100P	1	
C4304	F1H1H101A230	50V 100P	1	
C4305	F1H1H102A219	50V 1000P	1	
C4306	F1H1H102A219	50V 1000P	1	
C7801	F1H1C104A008	16V 0.1U	1	
IC7801	PNA4618M13VT	IC	1	
JK3802	K1CB106A0012	JACK,S1 IN	1	
JK4600	K2HA307A0009	JACK,IN2	1	
LB3301	J0JCC0000103	COIL	1	
LB3302	J0JCC0000103	COIL	1	
LB3303	J0JCC0000103	COIL	1	
LB4301	J0JCC0000103	COIL	1	
LB4302	J0JCC0000103	COIL	1	
PP4600	K1KA12B00129	CONNECTOR(12P)	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R3801	ERJ3GEYJ750V	1/10W 75	1	
R3802	ERJ3GEYJ750V	1/10W 75	1	
R3803	ERJ3GEYJ750V	1/10W 75	1	
R3804	ERJ3GEYJ102V	1/10W 1K	1	
R7801	D0GB221JA041	1/10W 220	1	
R7802	D0GB182JA007	1/10W 1.8K	1	
R7807	D0GB182JA007	1/10W 1.8K	1	
S7805	EVQ11G07K	SWITCH,FF	1	
S7806	EVQ11G07K	SWITCH,POWER	1	
S7812	EVQ11G07K	SWITCH,REW	1	
S7813	EVQ11G07K	SWITCH,EJECT	1	
■	07	VEP07A85A	1	(FL DRIVE P.C.B.)
D27501	B3AAA0000752	DIODE	1	
D27503	B3ACA0000273	DIODE	1	
D27505	B3ADA0000173	DIODE	1	
PP27501	K1KA08B00210	CONNECTOR(8P)	1	
QR27501	UNR521100L	TRANSISTOR	1	
QR27503	UNR521100L	TRANSISTOR	1	
QR27505	UNR521100L	TRANSISTOR	1	
R27501	D0GB221JA041	1/10W 220	1	
R27503	D0GB331JA007	1/10W 330	1	
R27505	D0GB331JA007	1/10W 330	1	
R27508	ERJ3GEYJ122V	1/10W 1.2K	1	
R27509	ERJ3GEYJ122V	1/10W 1.2K	1	
R27511	D0GB152JA007	1/10W 1.5K	1	
R27516	D0GB152JA007	1/10W 1.5K	1	
R27517	D0GB222JA041	1/10W 2.2K	1	
R27532	D0GB222JA041	1/10W 2.2K	1	
S27501	EVQ11G04M	SWITCH,OPEN/CLOSE	1	
S27502	EVQ11G07K	SWITCH,CH DOWN	1	
S27503	EVQ11G07K	SWITCH,STOP	1	
S27504	EVQ11G07K	SWITCH,CH UP	1	
S27505	EVQ11G07K	SWITCH,PLAY	1	
S27506	EVQ11G07K	SWITCH,REC	1	
S27507	EVQ11G07K	SWITCH,D2V	1	
S27508	EVQ11G07K	SWITCH,V2D	1	
S27509	EVQ11G07K	SWITCH,SELECT	1	
■	M1	M1_GAISO	1	
1	VEE1B46	WIRE WITH CONNECTOR(5P)	1	
2	VEE1B87	WIRE WITH CONNECTOR(4P)	1	
3	VWJ1796	FFC(40P)	1	
4	VEP06F99A	MAIN P.C.B.	1	(RTL)
5	VEP001K8A	DV JACK P.C.B.	1	(RTL)
8	VEP09138A	DIGITAL I/F P.C.B.	1	(RTL)
9	VEP79115B	DIGITAL P.C.B.	1	(RTL) (P)
9	RFKBES40VPC	DIGITAL P.C.B.	1	(RTL) (PC)
10	VWJ1727	FFC(7P)	1	
11	VWJ1728	FFC(6P)	1	
12	VJF0442	CLAMPER	1	
13	L6FALCCE0012	SMALL DC FAN MOTOR	1	
⚠ 14	RGR0360A-A	REAR PANEL	1	(P)
⚠ 14	RGR0360A-B	REAR PANEL	1	(PC)
17	RMA1897	CENTER ANGLE	1	
18	RMA1947	DVD ANGEL	1	
19	RMA1948	FRONT ANGEL	1	
21	RMZ0791	BARRIER	1	
22	RKA0178-X	LEG	1	
23	RKA0178-X	LEG	1	
24	VKA0382	LEG CUSHION	1	
25	VKA0382	LEG CUSHION	1	
28	VHD1452-2	SCREW	1	

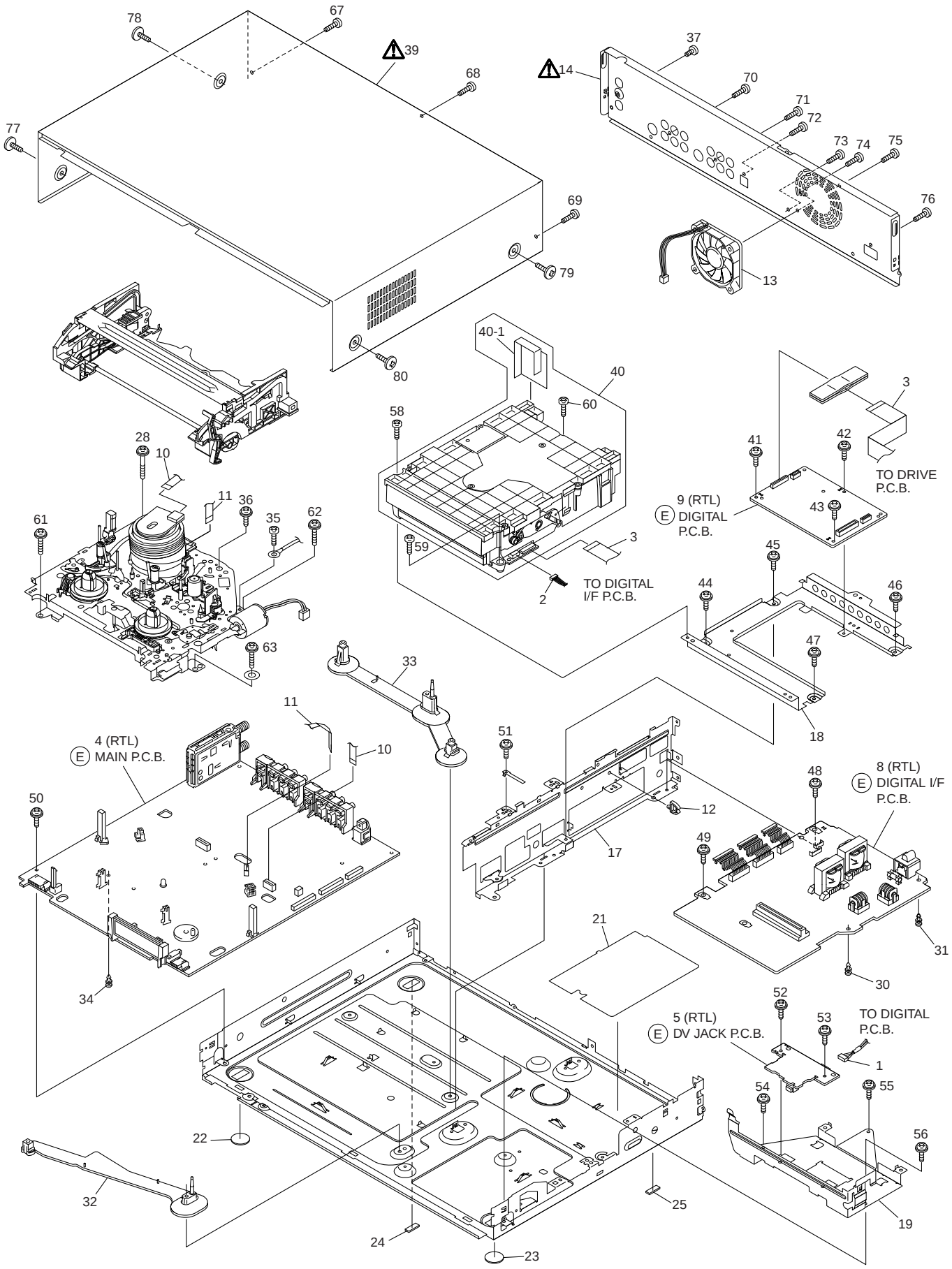
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
30	VKC0295	PCB HOLDER	1	
31	VKC0295	PCB HOLDER	1	
32	VMX3115	MECHA SPACER(F)	1	
33	VMX3229	MECHA SPACER(R)	1	
34	VMX3277	SPACER	1	
35	XTV26+5FFJ	SCREW	1	
36	XTW3+10PN	SCREW	1	
37	XSN3+4FJK	SCREW	1	
⚠ 39	VGM2077	TOP PANEL	1	
40-1	RMV0307	BARRIER	1	(SPG)
41	RHD30111-3	SCREW	1	
42	RHD30111-3	SCREW	1	
43	RHD30111-3	SCREW	1	
44	RHD30111-3	SCREW	1	
45	RHD30111-3	SCREW	1	
46	RHD30111-3	SCREW	1	
47	RHD30111-3	SCREW	1	
48	RHD30111-3	SCREW	1	
49	RHD30111-3	SCREW	1	
50	RHD30111-3	SCREW	1	
51	RHD30111-3	SCREW	1	
52	RHD30111-3	SCREW	1	
53	RHD30111-3	SCREW	1	
54	RHD30111-3	SCREW	1	
55	RHD30111-3	SCREW	1	
56	RHD30111-3	SCREW	1	
58	RHD30115-3	SCREW	1	
59	RHD30115-3	SCREW	1	
60	RHD30115-3	SCREW	1	
61	VHD1453-2	SCREW	1	
62	VHD1453-2	SCREW	1	
63	VHD1453-2	SCREW	1	
67	VHD0690-1	SCREW	1	
68	VHD0690-1	SCREW	1	
69	VHD0690-1	SCREW	1	
70	VHD0690-1	SCREW	1	
71	VHD0690-1	SCREW	1	
72	VHD0690-1	SCREW	1	
73	VHD0690-1	SCREW	1	
74	VHD0690-1	SCREW	1	
75	VHD0690-1	SCREW	1	
76	VHD0690-1	SCREW	1	
77	RHD30113	SCREW	1	
78	RHD30113	SCREW	1	
79	RHD30113	SCREW	1	
80	RHD30113	SCREW	1	
■	M2	M2_GAISO	1	
6	VEP04888A	FRONT JACK P.C.B.	1	(RTL)
7	VEP07A85A	FL DRIVE P.C.B.	1	(RTL)
27	RYP1286-S	FRONT PANEL ASS'Y	1	(P)
27	RYP1286A-S	FRONT PANEL ASS'Y	1	(PC)
27-1	RGU2375-S	DUB BUTTON (2)	1	
27-3	RKW0791-Q	FRONT WINDOW	1	
27-4	RKW0781-Q	DUB WINDOW	1	
27-5	RGL0673-W	PANEL LIGHT	1	
27-6	RGU2369-W	POWER BUTTON	1	
27-7	RGU2370-S	EJECT BUTTON	1	
27-8	RGU2371-S	OPEN BUTTON	1	
27-10	RGU2411-S	SELECT BUTTON	1	
27-11	RKF0722-S	BLINDER PANEL	1	
27-12	RKF0723-S	TRAY DOOR	1	
27-14	RGU2374-H	DUB BUTTON (1)	1	
27-15	RYF0762D-S	DOOR ASS'Y	1	
27-16	VMB2521	BLINDER SPRING	1	
27-17	VMB3410	TRAY SPRING	1	
27-18	RYF0763B-S	SD SLOT ASS'Y	1	
27-19	RHD26045-L	SCREW	1	
27-20	RHD26045-L	SCREW	1	
27-21	RHD26045-L	SCREW	1	
27-22	RHD26045-L	SCREW	1	
27-23	RHD26045-L	SCREW	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
27-24	RHD26045-L	SCREW	1	
27-25	RHD26045-L	SCREW	1	
27-26	RHD26045-L	SCREW	1	
27-27	RHD26045-L	SCREW	1	
57	RHD30111-3	SCREW	1	
■	M3	M3_GAISO	1	
101	VEG1641KIT	RDD CYLINDER ASS'Y	1	
101-1	VMD4983-1	FPC HOLDER	1	
102	VEM0750T	CAPSTAN MOTOR	1	
103	L1AZ00000004	FE HEAD ASS'Y	1	
104	VDB1431	TENSION ARM BOSH	1	
105	VDG1510	INTERMEDIATE GEAR	1	
106	VDG1511-4	MAIN CAM GEAR	1	
108	VDG1514-3	CHANGE GEAR	1	
110	VDV0391-2	CAPSTAN BELT	1	
111	VEM0797	LOADING MOTOR	1	
112	VMB3550	CHANGING GEAR SPRING	1	
113	VMD4987	WORM SHAFT HOLDER	1	
114	VMD4252	OPENER PIECE	1	
115	VMD4253	LED PRISM	1	
116	VML3624-2	MAIN LEVER	1	
117	VML3626-1	PINCH CHARGE ARM	1	
118	VML3632	IDLER ARM	1	
119	VMX3092	P4 CAP	1	
120	VXA7105-3	S SHAFT HOLDER	1	
121	VXA7106-3	T SHAFT HOLDER	1	
122	L1AE00000036	AC HEAD ASS'Y	1	
122-1	VHD1066-2	SCREW	1	
122-2	VHD1066-2	SCREW	1	
122-3	VHD1185	SCREW	1	
124	VXL3107	S LOADING ARM	1	
125	VXL3108	T LOADING ARM	1	
126	VXL3109-6	PINCH ARM	1	
127	VXL3110	P5 ARM	1	
128	VXL3111-1	TENSION ARM	1	
129	VXL3252	S BRAKE ARM	1	
130	VXL3113	T BRAKE ARM	1	
130-1	VMB3548-2	T BRAKE SPRING	1	
131	VXL3124-2	CHANGING LEVER U	1	
132	VXP2133-2	CENTER CLUTH U	1	
133	VXP2168	TORQUE CLUTCH	1	
134	VMA0L25	TOP PLATE	1	
135	VMD4255-4	SIDE PLATE L	1	
136	VMD4254-4	SIDE PLATE R	1	
137	VXA7110-4	CASSETTE HOLDER UNIT	1	
138	VXL3160	MAIN SHAFT	1	
139	VXA7311-1	SECTOR GEAR	1	
141	VML3706-1	OPENER LEVER	1	
142	VHD1044-1	A/C SET SCREW	1	
143	XYN3+C4FJ	SCREW	1	
144	VDR0372A	REEL TABLE	1	
145	VDR0372A	REEL TABLE	1	
146	XTN26+7JFJ	SCREW	1	
147	XTN26+7JFJ	SCREW	1	
148	XTN26+7JFJ	SCREW	1	
149	VMX2208	WASHER	1	
150	VMX3114	WASHER	1	
151	VMX2699	WASHER	1	
152	VMX3196	WASHER	1	
153	VHD1117-1	SCREW	1	
154	VHD1117-1	SCREW	1	
155	VHD1117-1	SCREW	1	
156	VDG1512-1	IDLER GEAR	1	
157	VDG1512-1	IDLER GEAR	1	
158	XTV26+5FFJ	SCREW	1	
159	XTV26+5FFJ	SCREW	1	
160	XTV26+8FFJ	SCREW	1	
161	XTV26+8FFJ	SCREW	1	
■	M4	M4_HOUSO	1	

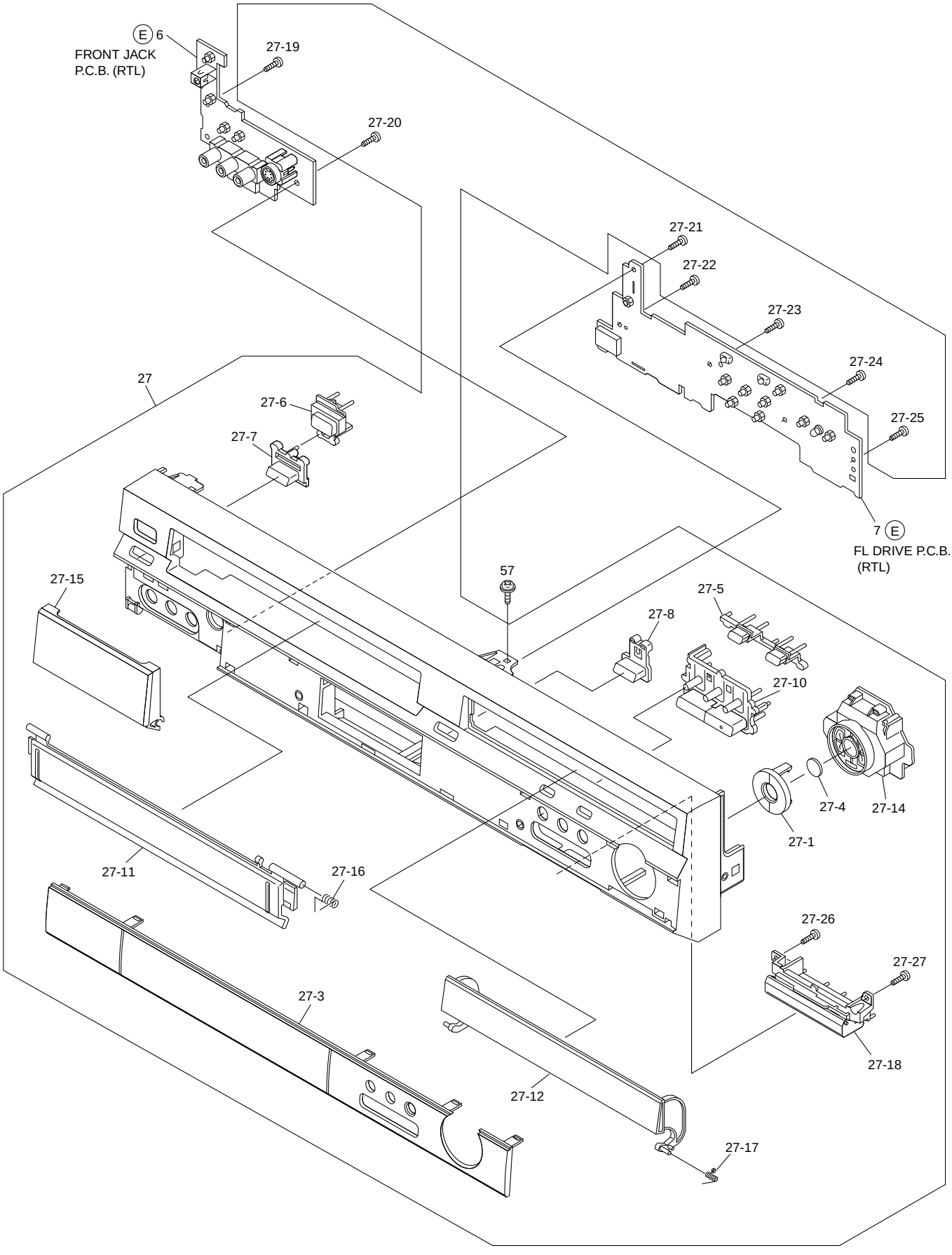
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
A1	EUR7720KY0	REMOTE CONTROL ASS'Y	1	
A1-1	UR77EC2003A	BATTERY COVER	1	
⚠ A2	K2CB2CB00006	AC CORD	1	
A3	K2KA6BA00003	AV CORD	1	
A4	K2KZ2BA00001	RF COAXIAL CABLE	1	
A5	VPK2737	ACCESSORY CASE	1	
⚠ A6	VQT0R73	OPERATING INSTRUCTIONS	1	(IA)
⚠ A6	VQT0R74	OPERATING INSTRUCTIONS	1	(PC)(IB)
A7	RPFX0042-2	VINYL BAG(F.B.)	1	
A8	VQT0R75	SIMPLE GUIDE	1	
A8	VQT0R76	SIMPLE GUIDE	1	(PC)
PC1	RPG7558	PACKING CASE	1	(P)
PC1	RPG7658	PACKING CASE	1	(PC)
PC2	RPN1797	CUSHION	1	
PC4	VPF1122-1	POLYETHYLENE BAG	1	

S7. Exploded Views

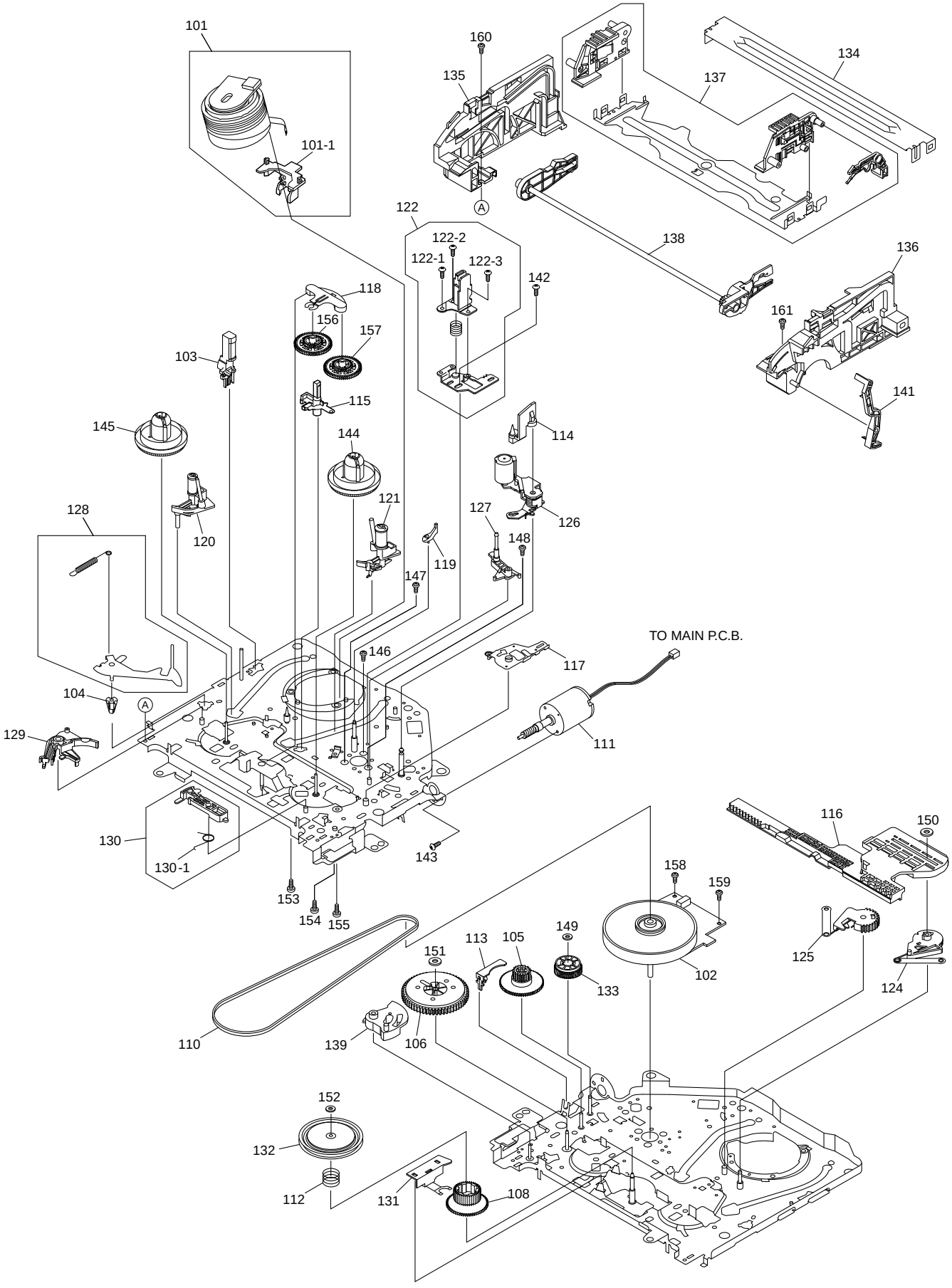
S7.1. Frame & Casing Section (1)



S7.2. Frame & Casing Section (2)



S7.3. Video Mechanism Section



S7.4. Packing Parts & Accessories Section